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THE MORE IMPORTANT RECORDS FOR JULY

By the end of July effective baiting for grasshoppers gave a very high degree of control throughout most of the infested area, especially where idle lands did not breed tremendous populations. In the southern and western counties of North Dakota, and in counties of South Dakota west of the Missouri River, as well as in the eastern part of Wyoming and in 15 eastern counties of Montana, enormous populations of Melanoplus mexicanus developed in idle lands in which effective baiting was not accomplished. General migrations of adults began about July 4 and were observed at different times until about the latter part of the month. The flights were in northwestern, western, and southwestern directions from the western portions of the Dakotas, eastern Montana, and eastern Wyoming.

The Mormon cricket infestation of south-central North Dakota is very much heavier than it was last year, with but little damage occurring, however. Contiguous to this infestation a light infestation extends almost across the State of South Dakota. A similar light infestation occurs in central and western Nebraska. Heavy migrations are occurring in the Judith Basin in Montana and some damage is being done in parts of Wyoming. Heavy infestations, representing migrations moving down from mountainous areas in which control was not conducted this year, are occurring at points in southern Idaho, with damage being reported in places to alfalfa seed production. In Nevada there are several areas of rather heavy infestation, while in Utah, eastern Washington, and northeastern Oregon are several scattered outbreaks. The infestation in Colorado has been reduced to insignificant numbers. The crickets, for the most part, are mature and egg laying is well under way although apparently it has not reached its peak over most of the infested area.

Several species of wireworms were reported as doing damage in limited areas in South Carolina, in the Great Plains States, and California.

Japanese beetle was much more abundant than during preceding years in southwestern New England, southeastern New York, in Delaware, northeastern Maryland, and the Eastern Shore of Maryland and Virginia.

The Asiatic garden beetle has been reported as increasing in abundance in the District of Columbia and nearby Maryland.

The white-fringed beetle has been discovered in the following localities heretofore not known to be infested: A rather general infestation in the vicinity of Monroeville, Monroe County, Ala.; Conecuh County, Ala.; Mobile, Ala.; Pass Christian, Harrison County, Miss.; Bolton, Hinds County, Miss.; Carriere, Pearl River County, Miss.; and with a general extension of the area known to be infested about Gulfport, Miss., and New Orleans, La.

The stalk borer was reported as doing considerable damage to tomatoes, sweet corn, and several flower-garden plants from New York to Maryland and westward to Missouri and Nebraska.

The beet webworm was locally abundant on sugar beets and garden plants in parts of the Great Plains and the Great Basin.

Armyworm outbreaks were reported from New England, Middle Atlantic, East Central, and Plains States.

Corn ear worm seems to be about normally abundant throughout the Eastern and Southern States.

Heavy infestations of sweet corn by European corn borer were reported from Connecticut, New York, New Jersey, Ohio, and Indiana.

No serious chinch bug infestations developed in the East Central States. This insect, however, did considerable damage in limited areas in Missouri, Iowa, and Texas.

Three additional counties, Box Butte, Kimball, and Banner, in western Nebraska, one county in northeastern Colorado, three counties in north-central Wyoming, and two counties in southeastern Wyoming not previously known to be infested by the alfalfa weevil were found infested this year. The insect was also found in southeastern Douglas County, Oreg.

Codling moth infestations in the Eastern States were generally normal to subnormal during July.

Fruit aphids, particularly the rosy apple aphid, were somewhat more abundant this month in the Middle Atlantic and New England States, westward to Minnesota, Missouri, and Kansas.

Oriental fruit moth is reported as moderately abundant in the New England, Middle Atlantic, and South Atlantic States, but seems to be on the increase in parts of Virginia, northern Georgia, and parts of Ohio and Kentucky.

Late peaches in central Georgia were heavily infested by second-brood plum curculio. Severe damage was also reported from Mississippi, parts of Ohio, and Michigan.

Rather heavy infestations of grapo leafhopper were recorded from New York through the Lake States to the Great Plains and in Utah.

Colorado potato beetle has been found on the western edge of the Twin Falls area, an important potato-growing section in south-central Idaho, not previously infested. This insect is also more abundant than last year in the Ogden-Clinton area of Utah.

Potato psyllid was causing very serious damage to potatoes in the North Platte River valley in Nebraska.

The potato leafhopper is more abundant than it has been for several years in Ohio.

The harlequin bug was reported in damaging numbers in Delaware, Maryland, Kentucky, Tennessee, Missouri, and Oklahoma.

Blister beetles were very generally reported from most parts of the country, often doing serious damage to truck and flower gardens.

Heavy infestations of forest tent caterpillar are reported from Vermont, Massachusetts, and New York.

General infestations by bagworm are reported from Delaware southward to Georgia and in the lower Ohio Valley States; also from parts of Texas.

Elm leaf beetle was reported as quite generally prevalent in the New England and Middle Atlantic States, southward to Virginia and westward to Ohio.

Walnut caterpillar was unusually abundant in the Ohio and Mississippi Valleys.

A very heavy outbreak of chironomid midges occurred during the month in the artificial lakes and lagoons on the site of the New York World's Fair.

The Lone Star tick was collected for the first time in New Jersey this year.

THE MORE IMPORTANT ENTOMOLOGICAL FEATURES
IN CANADA, FOR JULY, 1938

Dry weather in Manitoba, in July, resulted in increased grasshopper activity which necessitated the use of poisoned bait generally throughout the southwestern part of the province. Maturing grasshoppers were causing some anxiety towards the end of the month, but damage had been comparatively light. In Saskatchewan, rains improved the grasshopper situation, but severe damage to the wheat crop by these insects continued in the southeast and northwest areas, with scattered trouble elsewhere. In some districts the grasshoppers moved from unpoisoned summerfallow, causing much defoliation generally, and forcing considerable cutting of the crop for feed. By July 19 heavy flights were beginning in the southeast. Early in July, grasshoppers were causing minor crop losses in certain areas of Alberta. Grasshopper depredations in the interior of British Columbia were aggravated by dry weather conditions.

Light to moderate outbreaks of the armyworm occurred in several areas in Ontario, and locally in the Brandon district, Manitoba.

Say's stinkbug is abundant in southern Alberta in localized areas. The infestation is concentrated in the Taber-Barnwell district, and is more severe than at any time since observations were commenced in 1936. Some losses have occurred along the margins of grain fields.

There is a general infestation of wheat stem sawfly over large areas of Alberta and Saskatchewan. Throughout the greater part of the infested area there are good crop prospects which will facilitate oviposition. This year there is a tendency for the very severe infestations to occur along the field margins.

The Colorado potato beetle is reported to be unusually abundant throughout its range in the Dominion.

Cucurbits have been severely infested by the striped cucumber beetle in southwestern Ontario, and locally elsewhere in Ontario and in Manitoba. For the first time the species occurred in economic abundance in Saskatchewan.

The beet webworm developed in great numbers in the provinces of Manitoba, Saskatchewan, and Alberta, and in many districts caused moderate to severe losses in garden crops. The activities of the insects were in part beneficial, in that they fed upon noxious weeds.

The imported cabbage worm was reported unusually injurious to early cruciferous crops in southwestern Ontario, and very scarce in southern Alberta.

The codling moth infestation is about average in the Niagara district, Ontario. In the Okanagan Valley, British Columbia, unusually heavy infestations were expected following prolonged dry hot weather.

In the Niagara fruit district of Ontario, the oriental fruit moth is at a low level. In the more heavily infested peach orchards in southwestern Ontario, the parasite situation is very encouraging.

Thirty percent of the cherries growing on a farm near Brentwood (Vancouver Island), British Columbia, were infested by the cherry fruitfly. Prior to 1937, this species had not been observed in the district since 1906.

Another year of heavy infestation by the European spruce sawfly is expected in the Gaspé Peninsula, Quebec. Collections from southern Ontario have shown that the species is well established and abundant at Galt, Toronto, and Guelph. It has also been taken near Barrie, Angus, Peterboro, and Lindsay. No previous records are known from this region.

The spruce budworm appears to be very active throughout southern Ontario and in northwestern Ontario, east to Dryden. An infestation also appears to be building up in southern Ontario.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Wisconsin. E. L. Chambers (July 23): Only about 75 percent hatched. Very little crop damage, mostly in the northwestern quarter of the State.
- Ohio. T. H. Parks (July 25): Grasshoppers present in no more than usual numbers, and no injury expected in any part of the State.
- Indiana. J. J. Davis (July 26): Quite a few cases reported of grasshopper abundance in vegetable and flower gardens, but no conspicuous outbreaks in the State.
- Illinois. W. P. Flint (July 23): Grasshoppers have decreased greatly during the last month, owing to frequent and heavy rains. Present indications are that very little damage will occur in Illinois.
- Michigan. Michigan Extension News (June): Control operations are under way in a number of counties in the northern half of the Lower Peninsula.
- Minnesota. A. G. Ruggles and assistants (July): Grasshoppers are moderately to very abundant generally throughout the State.
- Iowa. C. J. Drake (July 20): The population is quite heavy in western and southwestern Iowa, but more than normal numbers of hoppers occur here and there throughout the State. Most of the damage up to the present has been done by the two-striped grasshopper (Melanoplus bivittatus Say), but the lesser migratory (M. mexicanus Sauss.) and the differential grasshopper (M. differentialis Thos.), also occur in destructive numbers. Timely rains have destroyed large numbers of newly hatched hoppers throughout most of the State. Unusually large numbers of hoppers supported by wild growth, thus being kept out of cultivated crops.
- H. E. Jaques (July 24): The grasshopper situation is serious along much of the western border of Iowa.
- Missouri. L. Haseman (July 23): Grasshoppers have continued to be abundant but scattered throughout the State during the month. The lesser migratory species is much less abundant than a year ago and in the vicinity of Columbia largely gone. Two-striped hoppers have been attracting greatest attention up to the present and are now mostly mature, with fully developed eggs. The differential grasshopper is beginning to mature, although most of them are still in the nymphal stage. The common Carolina locust (Dissosteira carolina L.) is maturing in the vicinity of Columbia and promises to be as abundant as it was a year ago.
- North Dakota. J. A. Munro (July 22): Flight dispersal of the more migratory forms is commonly observed in practically all parts of the State. The migrations are especially pronounced in the south-central and southwestern areas. In general, the flights have been mainly in a northwestern direction, although flights in other directions have occurred on warm days with the prevailing wind currents. Observations made in the south-central area on July 2 showed the predominating species to be M. mexicanus, while inspection in the same locality 2 weeks later showed a marked shift in species, owing

apparently to M. mexicanus having dispersed by flight, leaving M. differentialis, M. packardii Scudd., and other less migratory forms relatively more abundant.

South Dakota. H. C. Severin (July 9): Many M. mexicanus and a few M. bivittatus were mature by June 22. At present, eggs of M. mexicanus, M. bivittatus, M. differentialis, and D. carolina are still hatching. Flights have occurred during the last 2 weeks. Considerable crops will be lost despite successful control measures, owing to so much idle land where the hoppers breed and from which they are migrating.

Nebraska. M. H. Swenk (July 23): Flights are commonly observed by the middle of July. The two-striped grasshopper was first noted as having reached the adult stage at Lincoln on June 18, and adults were numerous by June 24 over most of eastern Nebraska.

Kansas. J. R. Horton (July 22): A moderately heavy migration of grasshoppers observed passing over Wichita on several days during the first week of July, at the same time that the number of individuals in local fields decreased materially. The migrations are believed to have started here, or to have been joined by local hoppers; however, there are still many left, and they are doing considerable damage.

H. R. Bryson (July 28): Less abundant in the eastern and central parts of Kansas than earlier in the season. In the western part of the State they are still doing some damage but are mostly well under control.

Oklahoma. C. F. Stiles (July 22): Owing to the control program, grasshoppers have not damaged the crops severely in Oklahoma. The number of grasshoppers is greatly reduced in the northern part of the State through control measures and some natural enemies, but they are present in large numbers in the southwestern quarter of the State. The principal species are M. differentialis and M. packardii. M. bivittatus is rapidly disappearing, the same holding true for M. mexicanus. Nymphs of an undetermined species in the second and third instar are showing up in large numbers in Kay, Caddo, and Grady Counties, especially in alfalfa fields. A report from Cimarron County, the extreme Panhandle county of the State, states that D. longipennis Thos. are now flying into the county.

E. E. Ivy (July 25): Grasshoppers did considerable injury to young cotton at the edges of many of the fields in McCurtain County, southeastern corner of the State, early in the season, but at present the cotton is easily outgrowing the injury.

Montana. R. A. Sheals (July 30): Considerable crop loss occasioned during the last few weeks in eastern Montana by hordes of grasshoppers, which had migrated into agricultural areas from nearby breeding grounds in range lands or waste areas. Flights were so heavy that damage occurred despite extensive control measures.

Utah. G. F. Knowlton (July 12): Grasshoppers are more abundant and damaging than since 1931. Approximately 75 percent are adult in some localities, with large-scale hatching still occurring in some areas.

(July 25): Fungous disease killing many grasshoppers in the Paragonah-Parowan area, southwestern Utah. This occurred in 1937 but did not prevent heavy outbreaks in the area this year.

Nevada. G. G. Schweis (July 25): Grasshoppers, principally M. mexicanus, are occurring in great numbers and control campaigns are necessary in several counties. Much damage reported to second-crop alfalfa.

California. C. C. Wilson (July 8): Infestation by M. devastator Scudd. in the grazing land of the foothills of 15 counties is more serious than in 1937. In Lassen County more than 400 grasshoppers per square yard were present in alfalfa. In Little Shasta Valley, in Siskiyou County, serious damage to alfalfa and grain was experienced; whereas in the San Joaquin Valley they were less numerous than during the outbreak of 1936, although the population is still sufficient to cause damage. M. marginatus Scudd. and M. femur-rubrum Deg. appear to be increasing in the alfalfa fields of Sacramento County. The maximum count in one alfalfa field was 1,224, with a mean of 384 per square yard. The grasshoppers at this density, and mostly in the second and third instars, were sufficient to destroy 50 percent of the second cutting of hay before it reached maturity.

C. S. Morley (July 8): One of the major insect problems in Kern County during the last month is the control of grasshoppers which have begun to come in on the agricultural crops from dry pasture land, where they have been more abundant than for many years.

MORMON CRICKET (Anabrus simplex Hald.)*

South Dakota. H. C. Severin (July): Mormon crickets are doing some damage. Fully 85 percent are adult. More crickets present than ever in the history of the State. For a complete report on the Mormon cricket see pp. 324 and 325.

Nebraska. M. H. Swenk (July 23): The easternmost points from which this pest has been reported in Nebraska are Oshkosh, Garden County, on July 15, and Purdum, Blaine County, in the center of the Nebraska sandhills, on July 20. In the latter locality they were plentiful, digging holes in the ground to a depth of 6 to 8 inches.

Nevada. G. G. Schweis (July 25): Mormon crickets are as abundant as in 1937, and a seemingly decided increase in the population westward.

WIREWORMS (Elateridae)

South Carolina. O. L. Cartwright (July 13): Unusually severe injury from wireworms, chiefly Horistonotus uhleri Horn, is being experienced in Colleton, Hampton, Jasper, Dorchester, Horry, and other coastal counties of the State during the present season. A considerable acreage of corn will be a complete failure because of the worms.

Iowa. C. J. Drake (July 20): Wireworms have damaged some corn in the vicinity of Hawarden and Dysart, some of the fields being very heavily infested.

* For a complete report on the Mormon cricket, see pp. 324 and 325.

North Dakota. J. A. Munro (July 22): Wireworms (Ludius aereipennis destructor Brown) averaged slightly more than one per plant in a potato field 2 miles east of Park River on July 12.

Nebraska. M. H. Swenk (July 23): From Dawson County on July 9 came a complaint of the wireworm, Monocrepidius vespertinus F., attacking the lower portion of cornstalks.

California. R. E. Campbell (July 1): Damage from the sugar-beet wireworm (Limonijs californicus Mann.) is continuing in a large number of lima bean fields in Ventura County, southern part of the State, varying from no apparent damage to at least 50 percent. In several fields there were large bare spots several acres in extent, in which practically all of the plants had been killed, while in other fields damage was scattered throughout the field.

M. W. Stone (July 17): L. californicus larvae were observed feeding on young corn plants near Downe, Los Angeles County, as late as July 9. Damage was so severe that replanting of over 3 acres was necessary.

FALSE WIREWORMS (Eleodes spp.)

Kansas. J. R. Horton (July 22): Adults of the false wireworms, E. suturalis Say and E. tricolorata Say, seen more frequently in the Wichita area than during the last 2 years. Apparently they are on the increase, although not numerous at any point so far observed.

JAPANESE BEETLE (Popillia japonica Newm.)

New England. E. P. Felt (July 22): This pest has been much more abundant and destructive in southwestern New England and southeastern New York than in preceding years.

Connecticut. J. P. Johnson (July 22): Bridgeport, New Haven, Greenwich, Hartford, New London, Norwich, New Canaan, and Danbury are named in order of infestation. The first four towns are heavily infested in good-sized local areas. In the other towns the infestation ranges from general to light in localized areas. As a whole the beetle is very troublesome, and many small areas are comparable to New Jersey infestations.

Rhode Island. A. E. Stone (July 29): Japanese beetle increase tremendous in the older infestation, and there are quite a number of new places where they have never been previously reported.

New York. New York State Coll. Agr. News Letter (July 5): In Nassau County injury to corn has been reported from Great Neck. (July 18): At present they are more numerous than on the same date last year.

Delaware. L. A. Stearns (July 21): Peak of injury in New Castle County has been reached; marked increase in infestation in the northern part of Kent County as compared with 1937.

Maryland. The Baltimore Sun (July 22): Corn, apples, soybeans, and other crops ruined by the beetle in Cecil County. Over 20,000,000 beetles captured on two farms alone. Also reported from the Eastern and Western Shores as apparently increasing in numbers.

Virginia. H. G. Walker (July 26): The insect seems to be much more abundant at Norfolk and on the Eastern Shore of Virginia than ever before. Ninety beetles have been collected in traps at the Virginia Truck Experiment Station, as compared with 50 beetles last year. Several hundred beetles were collected on smartweeds in a field of potatoes in less than 30 minutes.

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

Connecticut. J. P. Johnson (July 22): More adults are being reported than usual. The infestation is general from New Haven to Greenwich, in the southwestern part of the State.

District of Columbia and Maryland. B. A. Porter (July 30): Reported as causing some damage at several points in the Petworth and Chevy Chase sections, Washington, D. C. An adult taken flying into a house at Takoma Park, Md.

A SCARABAEID (Ochrosidia villosa Burm.)

Connecticut. J. P. Johnson (July 22): First adults found in East Norwalk on June 24. Over 19,000 beetles captured in light traps on an estate from less than 3 acres. Believed that this insect is on the increase. No feeding of any kind by the adult observed.

GREEN JUNE BEETLE (Cotinis nitida L.)

Pennsylvania. H. E. Hodgkiss (July 26): A rather large infestation was observed at Harrisburg on July 20.

Ohio. T. H. Parks (July 25): Beetles received from Coshocton County on July 11 and from Butler County on July 18. They were clustered on ornamental vegetation.

Georgia. T. L. Bissell (July 22): Beetles are common and are doing some damage to figs at Experiment, central Georgia.

FULLER'S ROSE BEETLE (Pantomorus godmani Crotch)

Florida. J. R. Watson (July 22): Some damage was done to tung oil trees by this insect.

STALK BORER (Papaipema nebris nitela Guen.)

Vermont. H. L. Bailey (July 27): Reports indicate more than usual abundance of stalk borer in Washington County, central Vermont.

New York. N. Y. State Coll. Agr. News Letter (July 25): A bad infestation found in a commercial planting of tomato in Orange County, lower Hudson River Valley, on June 21. Over 30 percent of the plants were being killed.

Maryland. E. N. Cory (July 1): Reported from Mount Savago, in the northwestern part of Maryland.

Indiana. J. J. Davis (July 26): From June 18 to July 10 numerous complaints were received from all sections of the State. Most of the infestations were in field and sweet corn, although several were in garden plants, particularly dahlias.

Ohio. T. H. Parks (July 25): This pest was very abundant in many parts of the State.

Kentucky. M. L. Didlake (July 25): Common stalk borer reported injuring corn at Lexington and Covington on June 25 and tobacco at Eastwood on June 27. All localities are in the eastern half of the State.

Michigan. R. Hutson (July 25): This pest reported on June 3 in tomatoes at Ferndale, and on hollyhocks on July 6 at Stockbridge. Both towns are in the southeastern part of Michigan.

Wisconsin. E. L. Chambers (July 23): Reported from all sections of the State as attacking garden plants, potatoes, corn, and tomatoes.

Missouri. L. Haseman (July 23): This insect continued to do considerable damage during the first 2 weeks of July.

Nebraska. M. H. Swenk (July 23): The stalk borer proved troublesome in Richardson, Cedar, and Saline Counties, all in eastern Nebraska, during the latter part of June. This pest was damaging raspberry stalks in Saline County.

BEET WEBWORM (Loxostege sticticalis L.)

South Dakota. H. C. Severin (July): This webworm is locally abundant and damaging to gardens.

Nebraska. M. H. Swenk (July 23): Complaints of damage to sugarbeets and other crops by this insect were received from Morrill, Cheyenne, Kimball, and Banner Counties, in the southwestern corner of Nebraska, during the latter part of June.

Idaho. R. W. Haegle (July 18): During early July countless moths were present over the green pea district in Valley County. By the 18th, many worms had hatched and necessary control measures were in progress.

J. R. Douglass (July 25): Outbreak of the beet webworm in south-central Idaho, necessitating control measures over 4,000 acres of beets.

Utah. G. F. Knowlton (July 9): Webworm moths are abundant in many northern localities. Some reports of crop injury have been received recently. (July 15): The larvae last week moved in large numbers from alfalfa and Russian-thistle into adjoining gardens.

MORMON CRICKET (Anabrus simplex Hald.)

- North Dakota. T. J. Schmitt, Jr. (July 29): Farmers in Emmons County estimate there are 50 times as many crickets present as last year, but so scattered that no damage is apparent. Concentrations becoming more noticeable in the hills and uncultivated fields. Bands now scattered in Burleigh County over a wide area. Half the townships in McIntosh County infested but infestation not heavy.
- South Dakota. T. J. Schmitt, Jr. (July 29): Lyman County lightly infested, with a moderate infestation on the Brule Indian Reservation, all crickets in the adult stage, females predominating. Oviposition in progress. Light infestations in Hand, Jerauld, and Buffalo Counties, with egg laying in progress on the high ridges. Peak of egg laying expected in about 2 weeks. Infestations in Potter, Walworth, and Campbell Counties apparently moved eastward onto agricultural and range lands. All crickets in the adult stage and egg laying taking place in Walworth and Potter Counties. About 30 to 40 thousand acres in north-central McPherson County lightly infested.
- Nebraska. T. J. Schmitt, Jr. (July 29): Infested area in Scotts Bluff County about 10 miles long and 6 miles wide. Population very light and widely scattered. Light infestations of Mormon cricket, or a related species, in Cheyenne, Garden, and Lincoln Counties.
- Montana. T. J. Schmitt, Jr. (July 29): Crickets in the adult stage throughout the State, and laying eggs quite heavily. Heavy migrations from the range and mountainous areas in Judith Basin County. Infestation greatly reduced in the Big Coulee area of Stillwater and Golden Valley Counties. Most of the egg beds in Sanders County found in lower areas.
- Wyoming. T. J. Schmitt, Jr. (July 29): Original infestation apparently in the Sixty-six Mountains on the state line between Nebraska and Wyoming. Crickets in Goshen County very heavily bunched and causing damage to wheat in this area 2 weeks ago, but now spread over several thousand acres of wheat and range lands. **Peak** of egg laying not expected for 2 or 3 weeks. Most of larger bands of crickets near crop areas in Sheridan and Johnson Counties destroyed, or scattered. Many small bands found to be breeding and laying eggs in areas where control operations have not been practical. Ovipositing in Campbell County.
- Idaho. T. J. Schmitt, Jr. (July 29): Control measures to be concluded in Elmore County on August 1. Production of alfalfa seed in this area liable to necessitate extra work. Oviposition not complete and some crickets still mating. In Washington County crickets in rather concentrated bunches, doing considerable damage to alfalfa seed. Exceptionally heavy migrations from the Forest Reserve toward agricultural areas in Fremont County, and considerable egg laying noted in the lower areas. A few crickets in the Camas meadow area still in the

7th instar. Exceptionally heavy migrations occurring against the permanent barrier in the Midvale area of Washington County, little crop damage resulting. Crickets laying heavily throughout the County. Wasps reported quite active on crickets in several regions. Crickets in Elmore County moving into alfalfa fields left for seed. Heavy oviposition in Blaine County.

Utah. T. J. Schmitt, Jr. (July 29): Egg laying still at its peak in the Eureka area of Juab County, but all large bands destroyed. Crickets not migrating but seeking egg-laying localities, chiefly on rocky south slopes of hills and in roadbeds.

Nevada. T. J. Schmitt, Jr. (July 29): Injury to cultivated crops noted near Elko, Elko County. Heavy injury in Sonoma Canyon, Pershing County, to cultivated and range lands. Injury of about 90 percent observed in a field of wheat and oats in Thomas Canyon, and heavy damage noted in the Indian Springs area. Area east of Golconda, along the Humboldt River, subject to several invading bands, migrating toward the river and scattering throughout alfalfa and grain fields in this area. The Jake-Kelly Creek infestation found to be widely scattered over about 90 square miles. New migrations found to be entering the Squaw Valley area. Little egg laying taking place over the area west of Elko City. A great number of wasp parasites, Palmodus laeviventris Cross., working on the crickets, as well as large bands of blackbirds feeding on them.

Washington. T. J. Schmitt, Jr. (July 29): No cricket movements observed in Franklin County, high temperatures contributing to increasing mortality of the adults. An adult survey made in Okanogan County during the week showed several light to moderate infestations of Steiroyxys sp. and Apote notabilis Scudd., as well as 3 moderate to heavy infestations of undetermined cricket species. Egg laying under way generally.

Oregon. T. J. Schmitt, Jr. (July 29): Crickets moving into crop lands near Newbridge, Baker County, and in Wallowa County. In Gilliam County the infestation extends across all the northern part of the county. Both Mormon crickets and Apote notabilis present, the latter more numerous, in a generally light infestation. Small infestation in Sherman and Jefferson Counties. Both species of cricket occurring over about 100 sections of land in Wasco County, Mormon crickets being more numerous, eggs deposited over the whole area, and females still ovipositing. Infestations in Gilliam, Morrow, and adjacent counties found to cover a much larger area than believed infested, but infestations mostly light. Large numbers of crickets moving toward crop areas in Baker County.

C E R E A L A N D F O R A G E C R O P I N S E C T S

WHEAT AND OTHER SMALL GRAINS

ARMYWORM (Cirphis unipuncta Haw.)

Maine. J. H. Hawkins (July 20): The armyworm is occurring generally in outbreak numbers on corn, timothy, oats, and barley. Control measures in progress.

G. W. Simpson (July): Reported as damaging corn in home gardens at Presque Isle, northeastern Maine.

New Hampshire. J. G. Conklin (July 26): The present, very severe outbreak, is the first really serious one since 1919. The infestation covers practically the entire State, the most damage being found in towns bordering the Connecticut River, particularly in Grafton County, on the western edge of the State. Considerable damage has also been done in Rockingham County, in southern New Hampshire. Oats have received the greatest amount of damage, followed by corn, Hungarian and Japanese millet, and hay. In one case a field of 3 acres of cabbage was being badly riddled.

Vermont. R. D. Mallory (July 16): Oats and other crops have been completely destroyed in the vicinity of Fairlee, particularly around Bradford, across the Connecticut from Grafton County, N. H. Some farms are still free of the pest.

H. L. Bailey (July 27): First report of armyworm from Lunenburg, Essex County, northeastern Vermont, on July 11, most larvae about one-half to three-quarters grown. Infestation heaviest in Connecticut River Valley in Orange County, east-central Vermont, and Windham County, southeastern Vermont, and also found throughout Rutland County, southwestern Vermont. Pupation began in Windham County about July 17 and few larvae to be found on July 24. Outfields principal points of infestation and many severely damaged. Some cornfields also suffered.

Massachusetts. A. I. Bourne (July 23): Armyworms made a rather sudden appearance in several sections of the State. Reports of their presence and of rather serious feeding received from the eastern part of the State. No serious outbreaks have been reported thus far from the Connecticut Valley region or from Berkshire County to the west, although the pest was present in Amherst, and an outbreak was reported from Palmer on the eastern margin of Hampden County.

G. Erickson (July 9-15): An outbreak occurred at Palmer, in south-central Massachusetts, the armyworms first attracting attention on July 9, when, after hay had been cut on part of a 2-acre recreation lot, the caterpillars began migrating in all directions in search of food.

Connecticut. W. E. Britton (July 22): Larvae received from Orange, New Haven County, on June 24; reported on new grass along highway at Norwalk, Fairfield County, on July 5; on oats and grass at Ellington, Tolland County, on July 11; from Windham County as more prevalent than last year, 20 cases having been reported, several of them serious.

- Rhode Island. A. E. Stone (July 29): Armyworms present in a greater number of places than last year and have damaged oat, corn, and clover.
- New York. N. Y. State Coll. Agr. News Letter (July): Armyworms are occurring in outbreak numbers in Chautauqua, Allegany, Livingston, Monroe, Ontario, Orleans, Tompkins, Cayuga, Oswego, Jefferson, Saratoga, Columbia, Westchester, Ulster, Sullivan, Nassau, and Suffolk Counties.
- Pennsylvania. H. E. Hodgkiss (July 26): Armyworms started to migrate on July 12, and were commencing to pupate on July 25 in Luzerne, Lackawanna, and Wyoming Counties, in northeastern Pennsylvania.
- Michigan. R. Hutson (July 25): The armyworm was reported from Lakeview, Middleton, Bad Axe, and Breckenridge in the center of the Lower Peninsula during the middle of July.
- Illinois. W. P. Flint (July 23): Second-brood armyworms are making their appearance in moderate numbers in the northern quarter of the State.
- North Dakota. J. A. Munro (July 22): Spotted infestations reported from Cass, Traill, and Walsh Counties, on the eastern border of the State, injury occurring to oats, corn, and, to a lesser extent, to other crops. Some parasitization observed.
- Iowa. C. J. Drake (July 20): Some damage in oatfields during the last week in Cedar County, east-central Iowa.
- H. E. Jaques (July 24): Scattered reports of damage, principally from eastern Iowa.

HESSIAN FLY (Phytophaga destructor Say)

- Ohio. T. H. Parks (July 25): The wheat insect survey just completed shows that the infestation by counties averages 10.0 percent, compared with 4.3 percent in 1937.
- Missouri. E. T. Jones (July 7): The freeze of April 7-10 materially reduced a spring infestation in many fields in southwestern Missouri. However, some infestation resulted, and a relatively heavy infestation of second-brood flies has built up in fields of late-sown wheat.
- North Dakota. J. A. Munro (July 22): The hessian fly is scarce, only a few specimens taken in the Devils Lake vicinity, in the eastern part of the State.
- Kansas. E. T. Jones (July 7): Observations in southern and eastern Kansas indicate that the first generation of flies was greatly reduced by the freeze of April 7-10. As a result present infestations are generally light, protected spots in a few scattered fields showing relatively high infestations. A few infestations from second-brood flies have been observed.

Oklahoma. E. T. Jones (July 7): General, scattered, very light infestations observed throughout northern Oklahoma in fields lacking in infestation last year.

A LEAFHOPPER (Cicadellidae)

New York. N. Y. State Coll. Agr. News Letter (July 11): An edge of a wheat-field in Cayuga County became severely infested with clover leafhoppers when an adjacent meadow was cut for hay. The infestation was very severe within a rod or two of the meadow, but beyond that negligible. There were 25 to 30 hoppers on many of the wheat heads. Several fields checked showed the hoppers serious only in fields adjacent to mowed meadows.

CORN

CORN EAR WORM (Heliothis obsoleta F.)

New York. L. A. Carruth (July 29): First-brood infestations found to be remarkably low on western Long Island. Usually some serious commercial injury found in July but none this year. Pupae recovered from diggings in a field heavily infested last season have been reared to moths.

Delaware. L. A. Stearns (July 18): Infestation is reported from Smyrna, in Kent County.

Virginia. H. G. Walker (July 26): Damage to sweet corn has been unusually light in the Norfolk district and many fields of tomatoes are practically free from injury.

Georgia. C. H. Alden (July 21): Larvae are doing considerable feeding on ears of corn and some damage to tomatoes at Cornelia, northern Georgia.

Indiana. J. J. Davis (July 26): Not conspicuously abundant although specimens were collected feeding in green tomato fruits the first week in July.

Kentucky. M. L. Didlake (July 25): The corn ear worm is unusually abundant.

Mississippi. C. Lyle (July 25): Severe damage to corn in southern Mississippi. Medium damage to both tomatoes and corn in east-central Mississippi.

Louisiana. B. A. Osterberger and E. R. Lett (July): Eggs are fairly numerous at Baton Rouge on the late corn. Adults noticed on cloudy days in flight.

Wisconsin. E. L. Chambers (July 23): Reported from many sections of the State as doing some damage, principally to sweet corn and tomatoes.

Missouri. L. Haseman (July 23): In the vicinity of Columbia sweet corn ears showed considerable infestation during the second week of July and caterpillars had pupated by July 20. Over the State generally the pest has seemingly not attracted much attention.

Kansas. H. R. Bryson (July 28): Some injury to early sweet corn reported.

Utah. G. F. Knowlton (July 22): Larvae have damaged early sweet corn now on the market at Logan, Willard, and Salt Lake, in north-central Utah.

Nevada. G. G. Schweis (July 25): Several reports that corn ear worms are present in the usual numbers.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Mississippi. C. Lylo (July 25): Several patches of late corn badly damaged in southern Mississippi. Complaints of severe damage to corn in the Delta section.

Arkansas. D. Isely (July 20): A small local outbreak on corn observed in Washington County, northwestern Arkansas, on July 19.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Connecticut. N. Turner (July 20): Very serious damage to early sweet corn in the Housatonic Valley. Infestation in other areas is about as usual. Most of the insects in the pupal stage. In a commercial flower garden daisies and artemisias were very badly damaged.

New York. N. Y. State Coll. Agr. News Letter (July): In Rockland and Ulster Counties fields in tassel were observed on July 5 and 6, in which 90 to 100 percent of the stalks were infested by first-generation larvae, most of which were half-grown or larger. Fields of younger corn were lightly or moderately infested. On Long Island a potato field near East Meadows was examined on July 9. Examination of 100 newly dug vines disclosed 222 larvae in all stages of development and 8 pupae in 10 vines, together with traces of feeding. (July 25): Infestation of corn borer is 100 percent in early planted sweet corn in the southern part of Saratoga County. The first planting, now being harvested, shows 100-percent infestation; the second, a large amount of tassel lopping; and the third planting shows infestation.

L. A. Carruth (July 29): A survey of first brood of the 2-generation strain in sweet corn shows most severe infestations in Albany County, where damage to stalks and ears was so severe that no attempts were made to harvest some fields. Surveys in the county indicate approximately 10-percent pupation, although an empty pupal case has occasionally been found. Egg masses found in two fields on low land west of Albany on July 28.

New Jersey. T. L. Guyton (July 14): Larvae are very numerous in sweet corn. The stalk infestation is approximately 100 percent at Bound Brook, north-central New Jersey.

Indiana. J. J. Davis (July 26): This pest is definitely on the increase. A noticeably large percentage is pupating, indicating the development of the 2-brooded form, especially as the borer moves southward.

Wisconsin. E. L. Chambers (July 23): First infestation found on July 18 on sweet corn in Kenosha County, southeastern Wisconsin.

CORN ROOTWORM (Diabrotica longicornis Say)

Tennessee. G. M. Bentley (July 23): Reported on July 14, as damaging corn in Obion and Tipton Counties, western Tennessee. Larvae were found eating the roots to such an extent that the stalks fell over. Adults on July 14 occurred in large numbers and fed not only on corn but upon soybeans planted with the corn. (Det. by A. G. Boving.)

SOUTHERN CORN ROOTWORM (Diabrotica duodecimpunctata F.)

Kentucky. M. L. Didlake (July 25): Considerable injury to corn appeared on the station farm in the vicinity of Lexington.

Mississippi. C. Lyle (July 25): Reported from Poplarville, southern Mississippi, that this insect has inflicted heavy damage to the corn crop in that section.

Iowa. C. J. Drake (July 20): The southern corn rootworm was observed in corn-fields in the vicinity of DeWitt and Osterdock, easternmost part of Iowa.

CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (July 25): No serious outbreaks occurred but damage reported to corn on one farm in each of three counties, Union, Morgan, and Clinton, in central and south-central Ohio. Bugs were discovered the second week of July, many of them having already moved into the corn. Most of the bugs have reached the adult stage.

Indiana. J. J. Davis (July 26): Although outbreaks of chinch bugs threatened during the latter part of June, none became serious. The counties where the bugs occurred in noticeable numbers included Knox, Daviess, Martin, Montgomery, Greene, and Clay, the southernmost point of abundance for 20 years.

Illinois. W. P. Flint (July 23): Heavy rains during the last month have largely done away with the threat of any damage.

Michigan. R. Hutson (July 25): A small infestation was reported from Monroe, in the southeastern corner of Michigan, on July 16.

Missouri. L. Haseman (July 23): The chinch bug has continued to attract some attention and call for control work in a number of counties scattered mostly from the central part of the State north to the Iowa border.

Iowa. C. J. Drake (July 20): Chinch bugs are fairly abundant in the southern two tiers of counties, and in central and western Iowa, extending deeply into the fourth tier of counties. Only a limited amount of damage in the small-grain fields but throughout most of the infested area, the population was large enough to destroy all the grasses in the wheat, oat, and barley fields. In a number of counties a few fields of corn have been badly injured or totally destroyed. The infestation in Audubon County is greater than in 1934.

Texas. R. K. Fletcher (July 22): Reported as seriously injuring grain sorghum in Ellis and Throckmorton Counties; in north-central Texas, and injuring corn in Victoria County, southeastern coast of Texas.

CORN LEAF APHID (Aphis maidis Fitch)

Florida. J. R. Watson (July 22): A heavy infestation occurred on the station grounds at Gainesville.

Illinois. A. F. Satterthwait (July 26): The corn leaf aphid is occurring in outbreak numbers in a large field of corn near Reynoldsville, Union County, southern Illinois, destroying tassels, foliage, and stalks to an extent indicating a probable loss of 33 to 40 percent of the crop.

Iowa. C. J. Drake (July 20): Infestations of the corn leaf aphid have been observed in the vicinity of Des Moines.

North Dakota. J. A. Munro (July 27): Infestation is generally distributed throughout a 225-acre field of corn near Gardner, Cass County. Practically all plants are heavily infested. Natural control agencies, including the larvae of syrphid flies and ladybird beetles, were active.

Nebraska. M. H. Swenk (July 23): Heavily infested cornstalks received from Buffalo County, south-central Nebraska, on July 19.

TERMITES (Isoptera)

Ohio. T. H. Parks (July 25): Specimens of green cornstalks received from Adams County, in southern Ohio, on July 5, showed termite injury. Some insects were present in the hollowed-out stalks. This is our first experience with termites in green corn.

ALFALFA

ALFALFA WEEVIL (Hypera postica Gyll.)

Nebraska, Colorado, and Wyoming. J. C. Hanlin (July 2): As a result of a survey this insect was found in the following localities not previously known to be infested: Harrisburg, Banner County; Hemingford, Box Butte County; and Kimball, Kimball County; all in western Nebraska; Hereford, Weld County, in northeastern Colorado; Thermopolis, Hot Springs County; Worland, Washakie County; and Rairden, Big Horn County; all in north-central Wyoming; Pine Bluffs, Laramie County, in southeastern Wyoming. Also found in Marsland, Daves County, Nebr., where it has been recorded previously. (Det. by L. L. Buchanan and A. G. Boving.)

Nevada. G. G. Schweis (July 25): An outbreak of alfalfa weevil in Douglas County, southwestern Nevada, and much damage done to the first-cutting alfalfa.

Oregon. R. W. Bunn (July 6): An extension of the infestation in southwestern Oregon discovered this year, larvae being found in small numbers in the

southern part of Douglas County. Appraisal of first crop damage in the Rogue River Valley, Jackson County, the center of this infestation, revealed that damage was not severe in most cases, although approximately one-fourth of the fields were damaged to some extent.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Louisiana. L. O. Ellisor (July): Very abundant in alfalfa and soybeans throughout the State.

CLOVER

A LEAFHOPPER (Aceratagallia uhleri Van D.)

Nebraska. M. H. Swenk (July 23): Abundant on red clover plants in Lancaster County, southeastern Nebraska, during the period from June 21 to July 20.

A PLANT BUG (Miridae)

Virginia. A. M. Woodside (July 20): Some fields of red clover in Augusta County, in northwestern Virginia, are being severely damaged by a small black mirid. It feeds also on white clover, but has damaged it less. Also observed feeding on several species of weeds.

SOYBEAN

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana. L. O. Ellisor (July): First-, second-, and third-instar larvae were taken in fields of soybeans on July 19 and 20 at Grand Isle, Houma, Franklin, and Plaquemine, all in south-central Louisiana.

COWPEAS

COWPEA CURCULIO (Chalcodermes aeneus Boh.)

South Carolina. J. N. Todd (July 26): The first generation of cowpea pod weevil is entering the pupal stage at Clemson, in northwestern South Carolina. Many fields show heavy infestation.

Georgia. T. L. Bissell (July 8): The number of overwintered adults collecting on cowpeas and beans at Experiment has been increasing the last week. No eggs can be found in the beans though the pods are being punctured. (July 26): The first adult of the first generation has emerged in a cage. Peas are not so severely punctured as they were 10 days ago.

CORRECTION: The note for May 19 on page 167 of the Survey Bulletin for June should read C. aeneus and not C. collaris Horn.

CROTALARIA

BELLA MOTH (Utetheisa bella L.)

Mississippi. C. Lyle (July 25): Larvae collected from crotolaria, and sent on July 22 from New Albany, Union County, in the northern part of the State.

F R U I T I N S E C T S

FLATHEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

- Iowa. C. J. Drake (July 20): Observed damaging apple trees through central and eastern Iowa.
- Nebraska. M. H. Swenk (July 23): Complaints of damage to several species of elm and hackberry trees received between June 21 to July 20, from locations scattered throughout the State.
- Kansas. H. R. Bryson (July 28): Borers, particularly flatheaded apple tree borers, are quite abundant but reports of injury fewer than last year.
- Oklahoma. F. A. Fenton (July 22): This pest is far less numerous than it has been in years, and at present, there is comparatively little oviposition.
- Utah. G. F. Knowlton (July 6): These borers have damaged apple and maple trees at Hyrum, in northern Utah.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

- Tennessee. G. M. Bentley (July 23): Found to be badly infesting Chinese arborvitae at Woodbine, Davidson County.
- Idaho. R. W. Haegele (July 5): During June large numbers of these beetles were found in scattered prune orchards in Ada, Canyon, and Payette Counties, southwestern Idaho, greater numbers than usual being present.

BUFFALO TREEHOPPER (Ceresa bubalus F.)

- Michigan. R. Hutson (July 25): Adults collected on pear in Berrien County, southwestern part of the State, on July 10.
- Missouri. L. Haseman (July 23): Adults are abundant on various garden plants and shrubs.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Ohio. E. W. Mendenhall (July 21): Found in an apple in a nursery at Cambridge, in east-central Ohio. The outbreak was rather severe.
- G. A. Runner (July): Reports indicate some increase of San Jose scale in the Sandusky area, north-central Ohio, over 1937.
- Wisconsin. E. L. Chambers (July 23): Much less scale than usual.
- Georgia. O. I. Snapp (July 15): Infestation on peach trees at Fort Valley, central Georgia, is still less than that of an average year.
- Oklahoma. F. A. Fenton (July 22): Reported as killing peach trees in Wister, LeFlore County, on the eastern border of the State.

Texas. R. K. Fletcher (July 22): The scale injured fruit and pecan trees in Tarrant County, northeastern Texas.

A RUST MITE (Phyllocoptes schlechtendali Nal.)

Washington. E. J. Newcomer (July 19): Reported to be more numerous than usual on apple and pear in the Yakima Valley.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (July 23): Spring-brood moths have not been captured in bait traps since July 8. Weather conditions since July 10 have been unfavorable for both larval and adult activity. Injury to fruit in most orchards appears to be considerably lighter than it was at a similar period during the last two seasons.

Delaware. L. A. Stearns (July 23): Break in moth activity between the spring and first broods, as determined by bait trap records from June 28 to July 8, inclusive. First-brood moths are now being captured in large numbers in the State and second-brood entries are increasing.

Virginia. A. M. Woodside (July 20): Infestation of apples in the Staunton vicinity considerably lighter than last year, but now on the increase. Catch of moths in bait traps light since the completion of emergence of spring-brood moths.

Georgia. C. H. Alden (July 21): The infestation in apples at Cornelia, northern Georgia, is from light to moderate.

Ohio. T. H. Parks (July 25): Owing to weather conditions during June, first-brood codling moth development was retarded, and second-brood adults did not appear until the middle of July at Columbus. The indications now point to a lighter second-brood infestation than a year ago.

G. A. Runner (July): First-brood infestation in the Sandusky area, somewhat lighter than in 1937.

Indiana. L. F. Steiner (July 26): Emergence of first-brood adults at Vincennes, in southwestern Indiana, has apparently passed its peak. Egg deposition by this brood was at its maximum about July 11 and again on July 18. Bait traps in 3 orchards failed to show any outstanding peak catches. The adult population in an unsprayed orchard increased from 15 moths per tree on June 22 to 30 on July 20. In one orchard, trees which received only a calyx spray averaged 118 worm entrances per 100 apples at the close of first-brood attack.

Illinois. W. P. Flint (July 23): The moth is about normal in abundance.

Michigan. R. Hutson (July 25): Second-brood moths began to appear in the northern half of the Lower Peninsula as follows: Vandalia on July 19; Monroe, Eau

Claire, and Allegan on July 18; Buchanan, Saint Joseph, and Lapeer on July 20; and Kibbie, Albion, Ann Arbor, and Birmingham on July 21.

Minnesota. A. G. Ruggles and assistants. (July): A few orchards near Minneapolis show 20 percent of the fruit affected.

Missouri. L. Haseman (July 23): The July brood of codling moths reached its peak in the southern part of the State during the first 10 days in July, in central Missouri around the middle of July, and in the northern part of the State around July 20. Attracting less attention than usual.

Nevada. G. G. Schweis (July 25): Codling moths abundant, and all unsprayed apples 100 percent wormy.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Missouri. L. Haseman (July 23): More abundant than usual at least in central Missouri, and unsprayed trees have been rather severely stripped. Most of the caterpillars had begun to pupate in rearing cages by July 20.

PISTOL CASEBEARER (Coleophora malvorella Riley)

Pennsylvania. H. E. Hodgkiss (July 26): Adults emerged in Adams County, south-central Pennsylvania, on June 18. First eggs observed on June 21, and very abundant by June 30. The peak of moth emergence occurred from June 25 to 27. On July 6 approximately 95 percent of the adults had emerged. Second-generation young were present on July 10.

APPLE LEAF SKELETONIZER (Psorosina hammondi Riley)

Missouri. L. Haseman (July 23): During the first half of July a rather heavy population of this insect appeared over much of the State; and considerable damage occurred on young orchards and those where there was no fruit crop.

APPLE LEAF TRUMPET MINER (Tischeria malifoliella Clem.)

South Carolina. J. A. Berly (July 26): Rather heavy infestation on crab apple at Columbia.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut. P. Garman (July 21): More abundant than last year, especially in the southern half of the State. Infestations generally light in northern part. Migration from apple complete by last week in June.

New York. N.Y. State Coll. Agr. News Letter (July 5): In a few orchards in Wayne County, western New York, where early control measures were lacking, rosy aphids are causing serious damage.

Maryland. E. N. Cory (July 23): Considerable injury noted at various points in the State.

Minnesota. A. G. Ruggles and assistants. (July): Rosy apple aphid very abundant on apple trees in Clay County, western Minnesota.

Missouri. H. Baker (July 5): This aphid, which has been very scarce in this section during the last few years, was observed as present in small numbers in several orchards in the vicinity of St. Joseph and DeKalb, in northwestern Missouri, during the period from May 12 to June 1. Damage was not important.

Kansas. H. Baker (July 5): Observed as present in small numbers in several orchards in the vicinity of Wathena, Blair, and Troy, in the northeastern part of the State. No severe damage.

APPLE APHID (Aphis pomi Deg.)

Maine. F. H. Lathrop (July 22): Comparatively cool, rainy weather during mid-summer has favored the development of aphids, and the numbers are increasing in apple orchards in Monmouth, Kennebec County, in the south-central part of the State. They are not present in outbreak numbers.

New York. N. Y. State Coll. Agr. News Letter (July): Becoming quite numerous over the State.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausn.)

Utah. G. F. Knowlton (July 23): Colonies, heavily infested with parasites, were observed at Salt Lake and Midvale.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Maine. F. H. Lathrop (July 23): First flies appeared in emergence cages at Monmouth on June 22. Peak of emergence was reached during the period of July 15 to 22. Flies are present in normal numbers on neglected trees.

New York. N. Y. State Coll. Agr. News Letter (July): Reported that emergence of flies in the Hudson Valley increased considerably during the period from June 28 to July 1. In Columbia County the infestation is heavy in unsprayed orchards and flies are still abundant.

APPLE SEED CHALCID (Callimome druparum Boh.)

Maine. F. H. Lathrop (July 22): First emergence in experimental cages at Monmouth, occurred on June 12. The peak of emergence occurred during the week beginning on June 17.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts. A. I. Bourne (July 23): Becoming abundant, particularly in orchards or blocks where control measures were omitted late in winter or early in the spring. However, rainfall has been sufficient to check the activities of the mites so that they do not seem to be causing any serious injury.

Connecticut. P. Garman (July 21): Browning of foliage is prevalent in many orchards in the State and is more prevalent than last month.

New York. N. Y. State Coll. Agr. News Letter (July): Noticeable damage was present in some apple orchards in the Hudson River Valley. In the western part of the State red mites on prunes were causing some bronzing in orchards and were alarmingly abundant in some places.

Delaware. L. A. Stearns (July 3): Generally severe on both peach and apple, where usual spray for this pest was omitted.

Ohio. T. H. Parks (July 25): Quite abundant during the last two weeks on apple foliage in many orchards.

PEACH

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (July 21): First generation light to medium in abundance. Second generation appearing in considerable numbers. Parasitism more generally present than in 1937.

New York. N. Y. State Coll. Agr. News Letter. (July 5): Larvae are taking a big toll on the terminals of young peaches in Orleans County, western part of the State.

Delaware. L. A. Stearns (July 23): Second- as well as first-brood larvae are heavily parasitized. The prospect is for a light infestation.

South Carolina. O. L. Cartwright (July 26): Most commercial orchards escaped serious injury in spite of unusually heavy twig infestation. Wormy fruit generally about 2 percent, although one Piedmont orchard showed 15 percent damage.

Virginia. A. M. Woodside (July 20): Infestation of peaches in Augusta County, northwestern Virginia, is heavier than for several years.

Georgia. O. I. Snapp (July 5): Of 23,499 ripe peaches cut and examined only 9, or 0.04 percent, was found to be infested. These peaches were from an orchard at Fort Valley in which no control measures were enforced.

C. H. Alden (July 21): This insect is on the increase in central and northern Georgia peach sections, and more twig and fruit injury has been observed and reported than for the last three years. As high as 9 percent of the harvested peaches have been infested.

Ohio. G. A. Runner (July): Heavy twig infestation in all peach orchards observed in the Sandusky area. Twig injury during early summer apparently was much heavier than in 1937.

Kentucky. M. L. Didlake (July 23): Still abundant in many orchards at Lexington. Third-generation larvae began entering twigs about July 15.

Mississippi. C. Lyle (July 25): On June 28 a correspondent at Houston, Chickasaw County, in the northern part of the State, sent in a number of injured peach twigs.

Michigan. R. Hutson (July 25): Has been active in the southern half of the Lower Peninsula, in the vicinities of Grand Rapids, South Haven, Benton Harbor, Rochester, Northville, and Pontiac.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Maine. F. H. Lathrop (July 22): Peak of abundance of adults in apple trees occurred during the week ending June 25. Larvae began leaving apples during the last week in June, at Monmouth. Throughout the State injury is distinctly more severe than last year.

New York. N. Y. State Coll. Agr. News Letter (July): In Ulster County, in the lower Hudson River Valley, one orchard was observed where larvae have caused considerable loss in sour cherries. Larvae in peaches have caused a heavy drop of fruit in the same area.

Delaware. L. A. Stearns (July 23): Jarring data show no peak of first-brood emergence during early July such as usually recorded; departure from normal possibly due to prolonged period of heavy rain.

Virginia. A. M. Woodside (July 20): Adults of the first summer brood are common in peach orchards of Albemarle County, in north-central Virginia. Oviposition in the insectary has been light.

Georgia. O. I. Snapp (July 15): Peaches in central Georgia were attacked by a heavy second brood of larvae. Conditions were very favorable for the development of new beetles in the soil and frequent rains in June facilitated emergence. There was heavy emergence late in May and in June. Second-generation egg deposition was heavy late in June, resulting in many wormy peaches of the late-maturing varieties. Fifty-one percent of the new beetles had deposited second-generation eggs by July 14. The infestation increased so rapidly late in June that it is now heavier than that of an average year.

C. H. Alden (July 21): Less than 1 percent of the peaches being harvested at Cornelia is infested, the lightest infestation in this section in several years.

Mississippi. C. Lyle and assistants (July 25): Severe damage to unsprayed peaches reported in the southwestern and east-central parts of the State.

Ohio. T. H. Parks (July 25): After 8 years of comparative freedom from this insect the peach crop is now infested. In one orchard, visited on July 22, the infestation was heavier than that of the Oriental fruit moth. No serious damage has occurred to apples.

Michigan. R. Hutson (July 25): This pest has been very active on the Lower Peninsula in the vicinity of Marquette and unusually severe at Grand Rapids, Farmington, and Augusta in the same area.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York. N. Y. State Coll. Agr. News Letter (July): In eastern New York the pest generally is not now serious enough to warrant control measures. In the western part of the State it has been found abundant in a few orchards so that control for the second-brood nymphs will be necessary. Changing over into the fly stage quite rapidly.

PEAR LEAF BLISTER MITE (Eriophyes pyri Fgst.)

Ohio. T. H. Parks (July 25): Infested pear leaves were received from Ashtabula County, northeastern corner of the State, with a statement that the pest was causing serious injury.

CHERRY

CHERRY FRUITFLIES (Rhagoletis spp.)

New York. D. W. Hamilton (July 23): Emergence of adults of R. cingulata Loew, as indicated by field emergence cages in Columbia County, eastern New York, was completed on July 1. A few flies still active in orchards on July 21. Peak emergence occurred from June 13 to June 24.

N. Y. State Coll. Agr. News Letter. (July 11): A little more maggot in cherries in Niagara County than for several years.

Ohio. G. A. Runner (July): More than usually abundant in the Sandusky area, especially in the later ripening varieties of sweet cherries.

PEAR SLUG (Eriocampoides limacina Retz.)

New York. R. E. Horsey (July): Request for information about control on cherry received on July 8. Since reported as common on pear and cherry in Irondequoit Township near Rochester.

N. Y. State Coll. Agr. News Letter. (July 11): In Niagara County a heavy infestation was found on sour cherries and some nursery stock.

Ohio. T. H. Parks (July 25): Reported as injuring pear and cherry trees all through June and July, and as much more common than usual.

Utah. G. F. Knowlton (July 22): Damaging cherry foliage in northern Utah; also in Salt Lake and Davis County orchards, cherry and pear trees have been damaged.

PLUM

APHIDS (Aphidae)

Nebraska. M. H. Swenk (July 23): The rusty plum aphid (Hysteroneura setariae Thos.) was reported from Antelope County, in northeastern Nebraska, on July 16 as attacking plum trees.

Utah. G. F. Knowlton (July 7): The thistle aphid (Anuraphis cardui L.) has seriously curled plum foliage at Tooele, in northern Utah. Three species of aphids are present on the foliage but this species is the most conspicuous.

RASPBERRY

AN APHID (Amphrophora rubi Kltb.)

Maryland. F. F. Smith (July 27): Raspberry plants at Beltsville have become infected with red raspberry mosaic during each of the last several years. Examinations have been made several times each season for the aphid vector, but none were taken in these plantings until June 16, 1938.

BORDERED PLANT BUG (Euryophthalmus convivus Stal)

Arizona. C. D. Lebert (July 20): Many adults were observed on beans, raspberries, loganberries, and blackberries in the East Verde River district. No nymphs and no pronounced damage found.

RASPBERRY FRUITWORM (Dyturus unicolor Say)

Ohio. E. W. Mendenhall (July 15): These are abundant in the fruit of the red raspberry plants in central Ohio, and are causing some damage.

Wisconsin. E. L. Chambers (July 23): Quite a number of raspberry plantings in the southern part of the State reported as infested.

Washington. W. W. Baker (June 26): Observed on raspberry and thimbleberry at Skykomish, King County, western Washington, and at Conconully, Okanogan County, north-central Washington, the latter being the first record for the County.

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

New York. N. Y. State Coll. Agr. News Letter. (July 18): In eastern New York the raspberry cane borer is causing the wilting and death of young raspberry canes. Well-grown larvae found near the tips of the shoots.

Virginia. G. E. Matheny (July 18): Reported on raspberry in Bland County, western Virginia. This is the first report from this locality. (Det. by W. J. Schoene.)

RASPBERRY CANE MAGGOT (Pegomya rubivora Coq.)

Massachusetts. A. I. Bourne (July 23): Abundant in Essex County, in the northeastern section of the State and causing considerable damage.

Minnesota. A. G. Ruggles and assistants (July): Very abundant in Ramsey and Hennepin Counties in the southeastern part of the State, and in some instances has done very great injury.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. State Coll. Agr. News Letter (July): In the Hudson Valley nymphs are hatching rapidly. They are unusually abundant and threaten to become destructive unless control measures are used. In the western part of the State they are causing serious damage. A few are winged, but the majority are in the nymphal stage.

Ohio. G. A. Runner (July): Less than the usual damage to early appearing grape foliage in the Sandusky area, caused by overwintering adults. Hatching and development of the first brood of nymphs earlier than usual.

Missouri. L. Haseman (July 23): Hoppers are beginning to do some damage to the foliage of susceptible varieties.

South Dakota. H. C. Severin (July): The pest is getting very abundant and is causing some damage.

Nebraska. M. H. Swenk (July 23): The insect was reported as injurious to wood-bine vines in Holt County, in northern Nebraska, on July 8.

Utah. G. F. Knowlton (July 9): In north-central Utah, at Farmington, Roy and Provo, the insects are seriously injuring some varieties of grapes.

EIGHT-SPOTTED FORESTER (Alypia octomaculata F.)

Michigan. R. Hutson (July 25): Reported on grape at Flint, Genesee County, in the Lower Peninsula.

South Dakota. H. C. Severin (July): Unusually abundant and working on grape and related plants.

Nebraska. M. H. Swenk (July 23): Received from Furnas County, on the southern border of the State, on June 27.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Ohio. G. A. Runner (July): Damage from first-brood larvae in the Sandusky area was more severe than in 1937 owing to concentration of the moths on the extremely light crop. Records from overwintered material show winter survival of approximately 79 percent. Heaviest emergence of the spring brood of moths during the period June 5 to 10, or about 2 weeks earlier than usual. Emergence of moths of the second brood commenced on about July 20. In the field on July 25 most of the cocoons on the vines contained pupae.

A PHYLLOXERA (Phylloxera sp.)

North Dakota. J. A. Munro (July 22): A severe infestation of phylloxera observed on grapes in Fargo, eastern part of the State, during the first part of July.

PECAN

PECAN WEEVIL (Curculio caryae Horn)

Georgia. T. L. Bissell (July 28): Appearing in small numbers in Spalding and Lamar Counties, in west-central Georgia, 22 weevils being jarred from 13 trees on July 26 and 27.

Louisiana. L. O. Ellisor (July): Heavy damage has occurred at Marksville, central Louisiana.

HICKORY-NUT CURCULIO (Conotrachelus affinis Boh.)

Mississippi. C. Lyle (July 25): A number of pecan drops received from Yazoo City, in the west-central part of the State on July 22. Many of them were infested.

FALL WEDWORM (Hyphantria cunea Drury)

Georgia. O. I. Snapp (July 1): The first generation on pecan is now more abundant than usual at Fort Valley.

Florida. J. R. Watson (July 22): Pecans and wild persimmons are being rather heavily attacked.

PECAN CIGAR CASEBEARER (Coleophora caryae-foliella Clem.)

Mississippi. C. Lyle (July 25): Pecan twigs sent in on July 18 from Sunflower County in the Delta, show infestation.

BLACK PECAN APHID (Melanocallis caryae-foliae Davis)

Louisiana. L. A. Hetrick (July 19): Specimens of this aphid taken at New Orleans. Apparently there is some disease transmission associated with the species. They were attended by the Argentine ant (Iridomyrmex humilis Mayr).

WALNUT

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Kentucky. M. L. Didlake (July 25): Reported injuring sweetgum at Lexington on July 9.

California. D. F. Barnes and C. K. Fisher (July): On October 5 and 7, 1937, defoliation noted on about four miles of roadside black walnut trees northwest of Fresno. The damage ranged from heavy feeding to complete defoliation on many trees. The trees had been grafted to English walnuts, branches of both varieties being present on a single tree. English walnut was preferred. Full-grown larvae were collected on October 7. Pupation occurred soon after collection. The pupae were held at room temperature during the winter and emergence began between March 29 and April 2, 1938 and was complete by April 7. Parasitization by Apanteles schizurae

Ashm. was found in the field. Parasitized larvae were collected and held during the winter and emergence of parasites began on April 6.

G. H. Kalcostian (July 5): Two small branches of black walnut, 10 to 15 feet above the ground, at Fowler, near Fresno, were defoliated. This was the first appearance of the pest this year. A plum tree in the same locality was not infested although both the walnut and the plum were infested last year.

PERSIMMON

PERSIMMON PSYLLA (Trioza diospyri Ashm.)

Mississippi. C. Lyle (July 25): Persimmon leaves infested with this pest recently received from a correspondent at Lumberton, Lamar County, in the southern part of the State.

CITRUS

ORANGE TORTRIX (Argyrotaenia citrana Fern.)

California. A. M. Boyce (July 25): Orange tortrix is more abundant than noted before in the entire navel areas in southern California. In many orchards infestations of from 75-100 percent are common, the small larvae feeding under the buttons.

CITRUS WHITEFLIES (Aleyrodidae)

Florida. J. K. Holloway (July 27): Dialeurodes citri Ashm. and D. citrifolia Morg. completed oviposition the first week in July. In central Florida the dominant species of the summer generation is the cloudy-winged whitefly. On July 19 the summer generation had advanced to 2nd- and 3rd-stage nymphs. Aleurothrixus howardi Quaint. is beginning to build up in this section.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Florida. H. Spencer (July 22): Citrus mealybugs are still increasing on citrus in the central part of Florida.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida. H. Spencer (July 27): Spreading quite rapidly from the twigs and older leaves to the new flush of growth and the fruit in central Florida. This spring the leaves were relatively free from scale infestation but they were present on the wood.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. H. Spencer (July 27): Have been hard to control this summer in central Florida because of frequent rain. Fruit that has not been protected by spraying or dusting is heavily russeted.

FIG

OLEANDER CATERPILLAR (Syntomeida epilais Walk.)

Florida. J. R. Watson (July 22): The larvae of the polka dot wasp moth were sent in from St. Augustine, in northeastern Florida, reported as feeding on figs.

TRUCK CROP INSECTS

WHITE-FRINGED BEETLE (Naupactus leucoloma Boh.)

- Alabama. R. A. Sheals (July 30): Reported for the first time at the following localities: Monroeville, Monroe County, and Conecuh County, both in south-central Alabama; and Mobile, Mobile County.
- Mississippi. R. A. Sheals (July 30): First record of the beetle at the following places: Pass Christian and Gulfport, Harrison County, on the Gulf; and Bolton, Hinds County, just south of west-central Mississippi.
- Louisiana. R. A. Sheals (July 30): An extension of the area infested by this insect around New Orleans has been reported.

BLISTER BEETLES (Meloidae)

- South Carolina. J. G. Watts (July): One report of damage by the striped blister beetle (Epicauta vittata F.) at Blackville, southwestern South Carolina, on soybeans. A few specimens taken in a trap light on several occasions during the month.
- Indiana. J. J. Davis (July 26): Several species are destructively abundant in vegetable and flower gardens in many sections of the State.
- Kentucky. M. L. Didlake (July 25): Blister beetles reported as follows: On tomatoes at Madisonville and at Dixon on July 11; on cotton at Murray, and on roses and shrubs at Louisville on July 25, all localities in the western half of the State.
- Tennessee. G. M. Bentley (July 23): On July 9 E. cinerea Forst. was found doing damage to Irish potatoes in Greenfield, Weakley County. Seventy-five percent of the foliage was destroyed.
- Mississippi. C. Lyle (July 25): In southern Mississippi a heavy infestation of E. vittata reported on eggplants at Sumrall, while in Lauderdale County no injury to cultivated crops noted although beetles were abundant. Specimens of E. lemniscata F. sent from Hernando, northwestern corner of Mississippi, on June 23, and reported as stripping leaves from garden plants. Specimens of the latter beetle collected on soybeans on July 6 at Ruleville, Sunflower County, in the Delta.
- Wisconsin. E. L. Chambers (July 23): Black blister beetles (E. pennsylvanica Deg.) doing serious injury to alfalfa, potatoes, and corn in spots all over the State, and especially abundant in the heavily infested grass-hopper areas.
- Minnesota. A. G. Ruggles and assistants. (July 12): Blister beetles numerous in several parts of the truck-growing section of Hennepin County, southeastern Minnesota.

Missouri. L. Haseman (July 23): Fewer complaints received during the month than usual, considering the continued abundance of grasshoppers.

North Dakota. J. A. Munro (July 22): Several species are very destructive to potato, caragana, and other plants. Most of the reports of serious injury have come from Valley City and Bismark vicinities, southeastern and south-central North Dakota, respectively.

South Dakota. H. C. Severin (July): Beginning to appear in large numbers and are causing considerable damage.

Nebraska. M. H. Swenk (July 23): Numerous complaints of blister beetles attacking garden crops, especially potatoes, received from over the State, particularly from the eastern half. The principal species are as follows: Macrobasis segmentata Say, M. unicolor Kby., M. immaculata Say, Epicauta lemniscata, E. cinerea Forst., and E. maculata Say.

Kansas. J. R. Horton (July 22): Very numerous and widespread in the Wichita area. Many complaints of severe damage to garden crops have come in. There are considerable flights to lights in the heart of the city.

H. R. Bryson (July 28): Particularly destructive to garden crops during the last month in western Kansas. Alfalfa also damaged, especially where plots grown for seed near Garden City.

Texas. R. K. Fletcher (July 22): E. vittata reported on tomatoes in Galveston County, southeastern Texas.

Utah. G. F. Knowlton (July 12): Reported as damaging alfalfa, beets, and several flower and garden plants in Tooele, Carbon, and Utah Counties.

A BEETLE (Strigoderma arboricola F.)

Maryland. E. N. Cory (July 15): This pest was found attacking vegetable and fruit crops at Denton, on the Eastern Shore.

CARROT BEETLE (Ligyrus gibbosus Deg.)

South Dakota. H. C. Severin (July): The carrot beetle is very abundant and doing much damage in gardens in eastern South Dakota.

CUCUMBER BEETLES (Diabrotica spp.)

Maryland. E. N. Cory (July 9): D. duodecimpunctata F. and D. vittata F. were found attacking squash at Severn, in Anne Arundel County.

South Carolina. J. G. Watts (July): Since July 3 specimens of D. balteata Lec. have been taken in a trap light at Blackville almost every night. Prior to that time no specimens had been taken since early April. No specimens observed in the field since early March.

Ohio. T. H. Parks (July 25): D. vittata was very abundant on melons and cucumbers during the first half of July, and was caught in large numbers in a light trap during June, but has greatly subsided at present.

- Missouri. L. Haseman (July 23): In the vicinity of Columbia squash and cucumber plantings became severely infested by the striped cucumber beetle during the first half of July, and they are still abundant on unprotected plants.
- Mississippi. C. Lyle (July 25): Reports of considerable injury by D. vittata to late plantings of melons from Meridian, in east-central Mississippi.
- Nebraska. M. H. Swenk (July 23): From June 21 to July 20 reports received from Lancaster, Seward, Howard, and Franklin Counties, in the eastern half of the State, stated that cucurbit vines were being damaged by D. vittata.
- Kansas. H. R. Bryson (July 28): D. vittata unusually abundant and destructive to melons, squash, and cucumbers at Manhattan and Bluff City, in the eastern half of the State.
- Texas. R. K. Fletcher (July 22): D. duodecimpunctata and D. vittata reported on corn, tomatoes, and eggplants in Galveston County.
- Utah. G. F. Knowlton (July 9): D. duodecimpunctata is very seriously damaging cucumbers and melons at Toquerville and Saint George, southwestern Utah.
- Arizona. C. D. Lebert (July 23): Gourds over the entire Phoenix area are being riddled by cucumber beetles. Many plantings have had 30 percent of the foliage reduced.

TOBACCO THRIPS (Frankliniella fusca Hinds)

- Florida. J. R. Watson (July 22): Considerable damage to peanuts on the station farm at Gainesville.

FALSE CHINCH BUG (Nysius ericae Schill.)

- Utah. G. F. Knowlton (July 25): These bugs are doing unusual damage in several parts of the State.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perty)

- Texas. J. N. Roney (July 22): The mole cricket was reported on black-eyed peas, tomatoes, peppers, mustard, collards, and eggplant in Galveston County.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- Maine. G. W. Simpson (July): Beetles are more numerous than they have been for several years. The larvae are doing considerable damage in fields not yet sprayed, at Presque Isle, northeastern Maine.
- Connecticut. N. Turner (July 30): Damaged untreated fields of early potatoes, in southern part of the State.
- Wisconsin. E. L. Chambers (July 23): After several years of comparative scarcity, reported in quite serious numbers throughout the State.

North Dakota. J. A. Munro (July 22): Moderately abundant at Fargo on potatoes.

Idaho. J. R. Douglass (July 25): Has been found on the western edge of the Twin Falls area and steps are being taken by the county and State officials to eradicate this insect from the large producing areas of south-central Idaho.

Utah. G. F. Knowlton (July 13): Have been more abundant this year in the Ogden-Clinton areas of southern Weber and northern Davis Counties than last year. No spread of the restricted infestation has been noted.

Oregon. H. P. Lanchester (July 4): Beetles are defoliating potato plants at Alicel, northeastern Oregon. Eggs, larvae, and adults were seen.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Massachusetts. A. I. Bourne (July 23): The summer brood of flea beetles has just begun to emerge. There is every indication that this brood will be fully as abundant as the spring brood.

Connecticut. N. Turner (July 20): Adults are emerging about 2 weeks later than usual. Infestation is at least as heavy as usual on potatoes.

North Dakota. J. A. Munro (July 22): Potato flea beetles abundant on potato plants at Fargo on July 6.

Utah. G. F. Knowlton (July 18): These beetles are damaging potato foliage at Ogden and Logan, in north-central Utah.

POTATO TUBER WORM (Gnorimoschema operculella Zell.)

Maryland. E. N. Cery (July 1): The tuber moth was found attacking potatoes at Princess Anne, Somerset County, on the Eastern Shore.

HORNWORMS (Protoparce spp.)

Delaware. L. A. Stearns (July 18): Severe infestation of the tomato hornworm in 11-acre planting of tomatoes at Rising Sun, Kent County.

Missouri. L. Haseman (July 23): From July 15 to 20 tomato hornworm moths were on the wing in great numbers in the vicinity of Columbia. The caterpillars were active on tomatoes and tobacco. We have had several complaints from tobacco growers.

Nebraska. D. B. Whelan (July 23): Moths (P. sexta Johan.) were first caught at the light trap on the night of June 21.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

New York. N. Y. State Coll. Agr. News Letter (July): Does not appear to be serious in any plantings observed in Dutchess County.

Virginia. H. G. Walker (July 26): Has been reported as being very abundant and injurious to beans at Suffolk, southeastern Virginia.

Ohio. N. F. Howard (July 12): More abundant than it has been for several years in the Columbus district, and migration continued well into July. Nymphs are becoming abundant on beans, but have not done serious damage.

Indiana. J. J. Davis (July 26): This pest is becoming very abundant.

Iowa. C. J. Drake (July 20): The potato leafhopper is very abundant in the vicinity of Ames, Des Moines, Clear Lake, and Cedar Rapids. Hopperburn becoming quite evident.

POTATO APHID (Illinoia solanifolii Ashm.)

Connecticut. N. Turner (July 20): Two fields of potatoes are heavily infested. In general the aphids are not abundant.

GREEN PEACH APHID (Myzus persicae Sulz.)

Nebraska. M. H. Swenk (July 23): Tomato plants have been considerably infested with the green peach aphid and other aphids. In eastern and central Nebraska, from Lancaster to Custer Counties, they reached the peak of abundance about June 25 to 28.

TOMATO PSYLLID (Paratrioza cockerelli Sulc.)

Nebraska. M. H. Swenk (July 23): Tomato and potato psyllid has built up an unusually heavy and threatening population in the irrigated sections of the North Platte Valley and in the dry land potato growing district of Box Butte, Sheridan, Dawes, and Sioux Counties, in western Nebraska. Damage to tomatoes reported from Custer County, in central Nebraska, on June 28, and at Lincoln on June 25 these insects were abundant, with eggs, nymphs, and adults present. The first ones were noted at Lincoln several days previously.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

Connecticut. N. Turner (July 20): Serious damage has been done to garden beans in untreated fields in most sections of the State.

New York. N. Y. State Coll. Agr. News Letter (July): Is not causing much damage in eastern New York, but is doing some damage in western New York, and in Wayne, Monroe, and Orleans Counties, where it has not been destructively present in previous years.

Delaware. L. A. Stearns (July 18): Rather severe injury throughout bean acreage in Sussex County, in southern Delaware.

Virginia. A. M. Woodside (July 20): Abundant and injurious in the Staunton district.

H. G. Walker (July 26): Present in about its normal abundance at Norfolk.

South Carolina. J. N. Todd (July 26): Causing more than the usual amount of damage in the upper part of the State.

Georgia. O. I. Snapp (July 14): There was a heavy emergence from hibernation at Fort Valley and beetles have increased rapidly during the last 2 weeks.

C. H. Alden (July 21): Unsprayed beans are showing heavy infestations at Cornelia in the northern part of the State.

Florida. J. R. Watson (July 22): Sent in from Havana, Gadsden County, western Florida. This is the second locality from which it has been collected in Florida, previous collections being at Monticello, Jefferson County, although it was found last summer in Alabama within one-half mile of the Florida line.

Tennessee. G. M. Bentley (July 23): Heavy infestations were found in Davidson, Cheatham, Lauderdale, and Madison Counties.

Mississippi. C. Lyle (July 25): The beetle continues to be the most serious garden pest in Monroe County. In Lauderdale, Newton, and Jasper Counties heavy damage was caused to beans on July 22. All these counties are along the eastern border of the State.

Ohio. R. H. Nelson (July): First-generation adults began appearing in large numbers in many fields near South Point, south-central Ohio, the second week of July. Young beans were quite severely injured.

Indiana. J. J. Davis (July 26): Very abundant throughout the State. In the extreme southern end of the State eggs for the beginning of the third generation are being laid, and at La Fayette eggs for the second generation are being laid.

Kentucky. M. L. Didlake (July 25): Reported from the following scattered localities: Lexington on June 25, July 1 and 5; Worley and Belton on June 25; Louisville on June 28; Nicholasville and Larue on July 22.

Missouri. L. Haseman (July 23): A number of plantings of beans in gardens at Cape Girardeau, southeastern Missouri, reported as seriously attacked by this pest. (First record of damage from the State.)

Colorado. R. L. Wallis (July 21): All stages are abundant in commercial fields at Grand Valley, Mesa County, in west-central Colorado. Late-planted fields will escape severe injury.

Arizona. C. D. Lebert (July 20): Heavy infestations observed on small plots of beans in the East Verde River district, in central Arizona. As many as eight adults found on a single plant and several egg masses found. Damage quite severe.

Utah. G. F. Knowlton (July 12): The outbreak has been rather severe in central Utah.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Kentucky. M. L. Didlake (July 25): Abundant on beans at Lexington.

Missouri. L. Haseman (July 23): Repeated complaints received in July. The insect has been much more destructive to young beans than usual in the vicinity of Columbia.

Louisiana. L. O. Ellisor (July): The bean leaf beetle is damaging soybeans throughout most of the State.

BEAN APHID (Aphis rumicis L.)

California. R. E. Campbell (July 1): Following several weeks of cloudy weather the bean aphid developed in a number of lima bean fields along the coast near Oxnard, Ventura County, in southern California. At least 1,000 acres were infested.

PEAS

PEA APHID (Illinoia pisi Kltb.)

Maine. J. H. Hawkins (July 20): In central Maine the fungus which often checks aphids on peas has been an important factor in the natural control of aphids. The pea mosaic has done considerable damage in certain pea fields.

Connecticut. N. Turner (July 20): Those aphids were not abundant on peas until after the pods were harvested.

New York. N. Y. State Coll. Agr. News Letter (July): Weather conditions were generally unfavorable to the development of the aphid, although in fields of late varieties the aphid population has reached large proportions and is inflicting considerable damage.

South Dakota. H. C. Severin (July): Abundant and doing considerable damage to garden and sweet peas.

PEA WEEVIL (Bruchus pisorum L.)

Indiana. J. J. Davis (July 26): During the last month the pea weevil was found infesting garden peas in several places in southern Indiana. First specimens sent in from Nashville on July 1 were larvae which had hatched only a few days before.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

New Hampshire. J. G. Conklin (July 26): Very numerous throughout the State.

Connecticut. N. Turner (July 20): More abundant than usual on cabbage and cauliflower in Hartford County, 2 acres of young cabbage being killed in Southington.

Pennsylvania. H. E. Hodgkiss (July 26): In very large numbers throughout the State.

Indiana. J. J. Davis (July 26): Showed up in conspicuous numbers and, while little damage has occurred in central Indiana, their early appearance in noticeable numbers indicates a heavy infestation a little later.

Missouri. L. Haseman (July 23): Rather abundant during the month but probably no more so than usual.

North Dakota. J. A. Munro (July 22): Very abundant in various parts of the State.

Idaho. J. R. Douglass (July 25): Very common on cabbage and turnips in the Twin Falls area, south-central Idaho.

Utah. G. F. Knowlton (July 18): Cabbage plants are being injured at Ogden.

CABBAGE LOOPER (Autographa brassicae Riley)

Indiana. J. J. Davis (July 26): Little damage so far, but the early appearance in conspicuous numbers in central Indiana indicates a heavy infestation later.

CABBAGE APHID (Brevicoryne brassicae L.)

Pennsylvania. H. E. Hodgkiss (July 26): Cabbage aphid reported on July 18 as causing considerable damage, especially in the western half of the State.

Utah. G. F. Knowlton (July 18): Cabbage plants are being injured by the cabbage aphid at Ogden.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Delaware. L. A. Stearns (July 21): An infestation is reported from Milford, Sussex County.

Maryland. Gertrude Myers (July 25): Attacking cabbage on Avery Road, 3 miles east of Rockville, Montgomery County.

Kentucky. M. L. Didlake (July 25): Reported from Gilpin, Casey County, eastern Kentucky, on July 22.

Tennessee. G. M. Bentley (June 26): Doing considerable damage to cabbage, mustard, and nasturtium in Crossville, Cumberland County.

Missouri. L. Haseman (July 23): Has been unusually scarce, as there have been only one or two complaints during July.

Oklahoma. F. A. Fenton (July 22): Reported from Cloud Chief, Washita County, in western Oklahoma.

SQUASH

SQUASH BUG (*Anasa tristis* Deg.)

Connecticut. N. Turner (July 20): There are very few squash bugs.

New York. N. Y. State Coll. Agr. News Letter (July): Very abundant on squash and pumpkin vines on Long Island, and is causing some damage in the western part of the State.

Maryland. E. N. Cory (July 9): Squash is being attacked at Severn, Anne Arundel County.

Missouri. L. Haseman (July 23): Unusually abundant in the vicinity of Columbia, and has been depositing eggs in great numbers since July 10.

Nebraska. M. H. Swenk (July 23): Pumpkin and squash vines in Sarpy, Saunders, Lancaster, and Howard Counties, in eastern Nebraska, were attacked during the period from June 21 to July 20.

Kansas. H. R. Bryson (July 28): Very abundant. Injury reported during the month from Manhattan and Abilene, in eastern Kansas.

Oklahoma. F. A. Fenton (July 22): Found as follows in northeastern Oklahoma: At Claremore, Rogers County; at Pryor, Mayes County; and at Vinita, Craig County.

Texas. R. K. Fletcher (July 22): Reported as seriously injuring cantaloups in Jones County, north-central Texas.

Idaho. J. R. Douglass (July 3): This insect has been found in Twin Falls County, south-central Idaho, and was first noted during the summer of 1937, but no report was made at that time. First record in this county.

Utah. G. F. Knowlton (July 3): Damaging squash at Farmington, Davis County.

SQUASH BORER (*Melittia satyriniformis* Hbn.)

Georgia. O. I. Snapp (July 14): Damaging summer squash at Fort Valley.

Nebraska. M. H. Swenk (July 23): Complaints of damage to squash vines received on July 6 and 12 from Richardson and Holt Counties, in southeastern and north-central Nebraska, respectively.

MELONS

MELON WORMS (Diaphania spp.)

Georgia. O. I. Snapp (July 14): Pickle worms, D. nitidalis Stoll, and melon worms, D. hyalinata L. are abundant, damaging squash and cantaloups.

Mississippi. C. Lyle (July 25): Heavy infestations of D. nitidalis have been reported from Meridian, in east-central Mississippi, on squash and cucumbers.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

South Carolina. J. G. Watts (July 2): The population has been constantly on the increase since the middle of June in Barnwell County, in the southwestern part of the State. Considerable defoliation is being done especially to young fields. Infestation greater than that of the average year.

APHIDS (Aphidae)

Nebraska. D. B. Whelan (June 21): Aphids taken at Lincoln from asparagus as follows: Myzus persicae Sulz., Aphis gossypii Glov., and Illinoia solanifolia Ashm. No damage done. (Det. by P. W. Mason.)

EGGPLANT

EGGPLANT LACEBUG (Garraphia solani Heid.)

Mississippi. L. J. Goodgame (July 25): Several heavy infestations on eggplant in Monroe County, in the northeastern part of the State.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Massachusetts. A. I. Bourne (July 23): Heavy rains have done much to hold down the abundance of the onion thrips, and present indications point to a somewhat lighter infestation than last year.

Connecticut. N. Turner (July 20): Not so serious as last year in most places owing to heavy rains. One field in Hamden was seriously damaged.

Pennsylvania. H. E. Hodgkiss (July 26): Generally abundant throughout the State.

Virginia. H. G. Walker (July 26): Moderately abundant on onions at Norfolk late in May and early in June.

Ohio. N. F. Howard (July 9): A moderate infestation was present on a variety planting at Columbus. Varietal differences in susceptibility to attack are apparent.

Utah. G. F. Knowlton (July 23): There is moderate injury to onions in Davis and Utah Counties.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Ohio. E. W. Mendenhall (July 14): This pest is abundant in some plantations in Licking County, north-central Ohio.

Minnesota. A. G. Ruggles and assistants (July): Abundant in every part of the State. Damage from 1 to 95 percent has been observed.

WHITE GRUBS (Phyllophaga sp.)

Indiana. J. J. Davis (July 26): Heavy infestation of white grubs in this year's planting in the important strawberry district of southern Indiana, in the vicinity of Borden and Pekin. The majority of the 1938 plantings appreciably infested, from 15 to 30 percent of the plants being killed.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California. J. C. Elmore (July 8): Larvae found in pepper buds at Artesia, Los Angeles County, where 500 to 600 acres of peppers are being grown.

TOBACCO

POTATO TUBER WORM (Gnorimoschema operculella Zell.)

Florida. F. S. Chamberlin (July 18): Light splitworm infestations occurred in tobacco fields in Gadsden County. In one instance caused appreciable injury in shade-grown tobacco.

HORNWORMS (Protoparce spp.)

Connecticut. A. W. Merrill, Jr. (July 26): Hornworms (P. quinquemaculata Haw.) appeared in two shade tents in the Windsor district, in the Connecticut River Valley, doing considerable damage in one of them. They do not usually occur in shade tents or attack tobacco sufficiently to be of concern to the grower this early in the season.

Maryland. E. N. Cory (July 23): Heavy and continuous emergence of the tobacco hornworm appeared in the entire tobacco territory, on the Western Shore.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Connecticut. A. W. Morrill, Jr. (July 12): Ordinarily the second brood appears about July 1 and reaches a maximum about July 23. This year the infestation at the first of the season, when tobacco was set on June 1, was as severe as last year and more severe than normal. However, it was not until July 12 that the first individuals of the second brood could be found on a few tobacco plants and in some potato fields. (July 27): Emergence of the beetle in appreciable numbers occurred in a few shade tents, largely those covering sandy or light loam land, on July 26. The beetle has not appeared in anything like normal numbers.

TARNISHED PLANT BUG (Lygus pratensis L.)

Connecticut. A. W. Morrill, Jr. (July 5): There is a severe infestation on one side of a field in Collinsville, Hartford County. Plants had been attacked while the leaves were still in the bud and the leaves were badly misshapen. In general this insect has not done great damage.

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum Westw.)

Florida. F. S. Chamberlin (July 12): Found in several fields of shade-grown tobacco in Gadsden County this season. In three shades the feeding of the insects and the accompanying sooty mold caused appreciable injury to the crop. Whiteflies were found in fields of sun-grown tobacco but the feeding caused no economic loss. Whiteflies have been collected on tobacco in this region in the past, but, previous to this season, no instances had been observed where the insects have caused damage of economic importance. (Det. by G. B. Merrill.)

CASTOR BEAN

SOUTHERN ARMYWORM (Prodenia eridania Cram.)

Florida. J. R. Watson (July 22): A commercial planting of castor beans in Manatee County, on the West coast, was seriously attacked by the semi-tropical armyworm.

Note: We are preparing a paper on the insects attacking the castor-bean plant wherever it grows. We are, therefore, making a special request that the workers examine plants for insects this summer and fall and send the findings to us. We should also appreciate any records you may have on hand.

C O T T O N I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. F. F. Bondy and C. F. Rainwater (July 2): In Florence County the first new weevils appeared on June 28. In 14 untreated plots the infestation averaged 7.7 percent. (July 16): In 16 untreated ~~check plots the infestation~~ averaged 12 percent. (July 23): Weevils are increasing very fast and in many fields the infestation has reached 50 or 60 percent. The weevil situation in Florence County is more serious than for several years.

Georgia. P. M. Gilmor and P. A. Glick (July 10): In undusted Upland cotton in southern Georgia from 18 to 50 percent of the squares were punctured, and in Sea Island cotton that had been dusted the field average was 8 percent. (July 17): Many late fields of cotton have been seriously injured. Second brood is pupating. (July 24): Second-generation weevils began to appear on July 18 and by the 23rd were present in considerable numbers.

Florida. C. S. Rude and L. C. Fife (July 16): In 30 fields examined the infestation was increasing rapidly. Lake County showed no infestation in eight fields examined. In the northern counties the infestation ran from 12 to 92 percent. (July 30): In Alachua and Gilchrist Counties the square infestation ranges from 10 to 91 percent and in many fields the bolls are heavily infested. In Marion County the infestation is increasing and ranges from 10 to 91 percent. The only field in Lake County thus far found to be infested has 30 percent infestation.

Mississippi. R. L. McGarr, et al. (July 9): In Lowndes and Oktibbeha Counties an examination of more than 10,000 squares in 15 untreated fields showed an average infestation of 18 percent as compared with 12 percent for the previous week and 2 percent at this time last year. (July 23): An examination of 10,600 squares in 19 untreated fields showed an average infestation of 28.5 percent.

E. W. Dunnam and J. C. Clark (July 2): In Washington County infestation counts made on seven plantations showed that the percentage of infested squares varied from less than 1 percent to 70 percent, with an average of 29 percent infested. (July 30): On three plantations the average infestation was 49 percent.

Louisiana. R. C. Gaines, et al. (July 2): In Madison Parish 52,800 squares were examined from untreated cotton, of which 2,157 were punctured, or an average infestation of 4.1 percent. (July 30): The infested squares increased to an average of 36 percent in 19 untreated fields examined; the infestations ranged from 7 to 69 percent.

Arkansas. D. Isely (July 20): The boll weevil was quite generally distributed over the cotton-producing part of the State by early July, where it is more generally distributed than in any year on record except 1923 and 1932. Since then excessive dry weather has appeared to have checked its development in many counties.

Oklahoma. F. A. Fenton (July 22): The infestation continues to be threatening; however, a 2-week period of hot, dry weather in early July has apparently checked the infestation somewhat.

C. F. Stiles (July 22): Appearing in larger numbers in southeastern Oklahoma than they have in a number of years.

E. E. Ivy (July 25): Infestation in McCurtain County has increased steadily since early in May. Still somewhat spotted, some fields having from 50 to 60 percent of the squares punctured, others having less than 10 percent. Average probably near 25 or 30 percent at present.

Texas. R. W. Moreland and A. B. Beavers (July 2): In Brazos and Burleson Counties in untreated check plots in cotton fields the infestations in cotton squares ranged from 12 to 31 percent, averaging 19.5 percent. (July 30): In the untreated check plots the infestations ranged from 14 to 77 percent, with an average of 45 percent. In the treated plots it ranged from 2 to 31 percent, with an average of 12 percent. In the untreated upland fields it ranged from 14 to 78 percent, with an average of 47 percent.

K. P. Ewing, et al. (July 2): In Calhoun County 1,100 squares examined in 11 untreated check plots showed an average of 6.2 percent boll weevil punctured squares as compared with 3.2 percent last week. In Jackson County 17,600 squares were inspected in 11 fields which showed an average of 78 percent weevil punctured squares. (July 30): In Calhoun County the infestation was 3.6 percent. In Jackson County the infestation decreased to 12 percent.

A WEEVIL (Epicaerus formidolosus Boh.)

Florida. C. S. Rude (June 30): Has been very abundant in the cotton fields in the Gainesville area. Estimated to be about 1,000 per acre in experimental fields, but somewhat less abundant now. Found in exactly the same parts of the cotton plant as the boll weevil and constant care required while making weevil counts not to confuse the two insects. No damage found that could be directly connected with the insect. Not found on weeds or other crops when area bordering these fields was searched. (Det. by L. L. Buchanan.)

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. A. J. Chapman, et al. (July 2): The bloom-infestation records in the 12 fields in Presidio County were completed this week. The

results from the five records made in these fields showed the infestation to be extremely spotted. The infestation was unusually high in the fields in which there was no winter pasturage or other cultural practice that would tend to reduce the surface population. The fields that were near retired cotton acreage also showed some increase in infestation. During 1937 a group of 25 fields was selected and only 1 examination of 1,000 blooms in each field was made during the latter part of June. From the 25,000 blooms examined there were 843, or 3.37 percent, infested. In 1938 a group of 12 fields was selected and 5 records were made in these fields during the latter part of June. The total number of blooms examined was 16,901, averaging 1,408 per field, and 513, or 3.03 percent, were infested. (July 9): Boll infestation counts were made in one field in connection with the insecticide tests. There was an average of about one boll per plant at the time that the record was made. Eleven of the 100 bolls examined were found to be infested. Since these were the first bolls formed it is apparent that there will be considerable damage in this field by the close of the season. The field showed a high bloom infestation. The cultural practices in this field were favorable for a high survival as the stalks were not cut until late in the fall and were not plowed under until spring. (July 16): Bloom-infestation records were made in the lower El Paso Valley (Hudspeth County) on July 5-7. The fact that an infestation was found this early in the year would indicate that the worms had passed the winter in this area. (July 23): Bloom-infestation counts were made in the Balmorhea area during the week ending July 16 with negative results.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Mississippi. C. Lyle (July 25): First specimens found this year in Holmes County, central Mississippi, on July 16. Found in Oktibbeha County last week, and also an unconfirmed report from Sharkey County, in the Delta.

R. L. McGarr, et al. (July 20): One large leaf worm was found in Lowndes County, 12 miles east of State College.

E. W. Dunnam and J. C. Clark (July 25): Leaf worms on three plantations near Leland, in Washington County.

Louisiana. I. J. Becnel (July): Heavy infestations in Bossier Parish and also reported in Ouachita Parish, both in northern Louisiana.

R. C. Gaines, et al. (July 6): Larvae in all instars from first to sixth were found in one field near Delta Point, in Madison Parish. (July 8): Larvae found about 14 miles south of Tallulah, in Madison Parish. (July 23 and 30): Leaf worms have been found in practically all fields of succulent cotton but not in sufficient numbers to cause "ragging."

Arkansas. D. Isely (July 20): First record for 1938 received from Columbia County, southwestern Arkansas, on July 16.

Oklahoma. C. F. Stiles (July 22): First worms this year collected on July 16 in Garvin County, south-central Oklahoma, one of the earliest collections of this insect this far north in the State.

Texas. R. W. Moreland and A. B. Beavers (July 2): Several cotton leaf worms were collected during the week in Brazos and Burleson Counties. (July 16): Leaf worms were doing considerable "ragging" on some farms. Some dusting was done on a number of farms. (July 30): Some dusting being done for second generation.

K. P. Ewing et al. (July 2): Many fields in Calhoun County have been dusted during the week for leaf worm control. (July 9): Most of the leaf worms are now in the pupal stage. (July 16): A new generation has hatched in many fields and dusting is very general throughout Calhoun County. A heavy infestation has appeared in the Lavaca River bottom of Jackson County. The infestation is now as heavy as it was at its peak in 1936. (July 23): The new generation of leaf worms of last week is completely under control. (July 30): Leaf worms continue to hatch and control measures have been used in many fields in Calhoun County during the week.

A. J. Chapman et al. (July 9): Leaf worms were found near Presidio on July 7. This is, so far as we know, the earliest record of leaf worms in this area. The worms were full grown when found and had already folded up leaves in preparation for pupation. The moths must have reached here in June. This is apparently the **first** generation as only a few worms were found. (July 23): General infestation but not yet abundant enough to cause serious damage.

BOLLWORM (Heliothis obsoleta F.)

South Carolina. F. F. Bondy and C. F. Rainwater (July 16 and 30): A few found feeding in squares in Florence County.

Georgia. P. M. Gilmer and P. A. Glick (July 10): Near Tifton bollworms are in most fields in small numbers. (July 24): Appearing in some numbers, but no serious damage to date.

Florida. C. S. Rude and L. C. Fife (July 2): Not as numerous as a few weeks ago in Alachua and adjacent counties. (July 30): There are a few in almost all fields but in general they are causing little damage. In a few fields they are serious.

Mississippi. R. L. McGarr, et al. (July 16): Observed on cotton occasionally this week in Lowndes and Oktibbeha Counties.

E. W. Dunnam and J. C. Clark (July 2): A few noted on two plantations in Washington County.

Louisiana. I. J. Beemel (July): Damaging young cotton bolls in several northern parishes.

Oklahoma. E. E. Ivy (July 25): A few worms seen in cotton during the last week in McCurtain County, southeastern Oklahoma.

Texas. R. W. Moreland and A. B. Beavers (July 2): A few eggs noted on cotton in both upland and bottom fields in Brazos and Burleson Counties. (July 9): Ninety-one eggs were found in examining 2,000 cotton terminals in bottom fields. Eggs ranged from 0 to 19 per 100 terminals, with an average of 4.55 eggs per 100 terminals. In an upland field of succulent cotton 800 terminals were examined and 8 eggs found, or 1 egg per 100 terminals. (July 30): Injury is rather spotted. There are scattering fields where heavy injury has been caused. On 13 farms the injured blooms, bolls, and squares varied from 4 to 45 percent, with an average of 9 percent. The number of eggs varied from 0 to 16 per 100 terminal buds, averaging 2.4 per 100 buds.

K. P. Ewing, et al. (July 2): There are a few bollworms in the cotton in Calhoun County, apparently more than usual at this stage of fruiting of the cotton. (July 30): This insect is more widespread than ever in this area, and continues to cause serious damage in Calhoun and Jackson Counties.

A. J. Chapman, et al. (July 16): Bollworms are more numerous on cotton in Presidio County than at any time in recent years. The cloudy, rainy weather during the latter part of June and early part of July was favorable to this pest. (July 23): In some of the fields fully 60 percent of the crop has been destroyed. Bollworm damage has also been reported from El Paso and Pecos districts.

COTTON SQUARE BORER (Strymon melinus Hbn.)

Texas. R. K. Fletcher (July 22): More common than usual on cotton in the Brazos River bottoms of Burleson County, southeastern Texas. Injury not serious.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

South Carolina. F. F. Bondy and C. F. Rainwater (July 30): There are not many in the fields--no damage has been done.

Mississippi. R. L. McGarr, et al. (July 2): Examination of 7,500 terminal buds of cotton plants in 23 fields in Lowndes and Oktibbeha Counties showed an average of 6 cotton flea hoppers per 100 terminal buds (3.8 adults and 2.2 nymphs). (July 23): The average number of flea hoppers for 100 terminal buds was 4.2. With the exception of a very few fields the infestation has been of very little importance.

Louisiana. I. J. Becnel (July): Doing considerable damage in Bossier and Caddo Parishes, northwestern Louisiana, necessitating control measures.

Oklahoma. E. E. Ivy (July 25): Not very abundant this spring in McCurtain County. High infestations, 50 to 60 percent, in a few upland fields, adjacent to horsemint, but not continuing long. From 5 to 10 percent infestation in all fields now, but doing considerable damage, as many as 40 to 50 blasted squares commonly found in 100 tips examined.

Texas. R. W. Moreland and A. B. Beavers (July 2): In Brazos and Burleson Counties population light in most cotton fields. (July 30): Hopper population generally light but in some fields of young cotton the infestation is fairly heavy.

K. P. Ewing, et al. (July 2): In Calhoun County this week 7,700 terminal buds were inspected in 22 untreated check plots, showing an average of 12 adults and 56 nymphs, or a total of 68 flea hoppers per 100 buds. This is in comparison with 79 last week and 78 the week before. (July 30): These insects can be observed in many fields but very little damage is being done except in a few fields of late June planted cotton.

TARNISHED PLANT BUG (Lygus pratensis L.)

Mississippi. R. L. McGarr, et al. (July 16): In Lowndes and Oktibbeha Counties a few noted on cotton this week.

E. W. Dunnam and J. C. Clark (July 30): A few can be found in most fields but they have caused no noticeable damage.

Oklahoma. E. E. Ivy (July 25): A few minor infestations in McCurtain County, all of them in instances where alfalfa had been cut nearby.

Texas. R. W. Moreland and A. B. Beavers (July 2): A few found in all fields visited in Brazos and Burleson Counties.

RAPID PLANT BUG (Adelphocoris rapidus Say)

Mississippi. R. L. McGarr, et al. (July 16): A few noted on cotton this week in Lowndes and Oktibbeha Counties.

Texas. R. W. Moreland and A. B. Beavers (July 9): In Brazos and Burleson Counties more abundant in cotton than they have been for several years.

LEAF APHIDS (Aphididae)

South Carolina. F. F. Bondy and C. F. Rainwater (July 2): In Florence County leaf aphids have increased during the week, probably due to cool, cloudy weather. (July 30): Leaf aphids are few even in dusted cotton. Heavy rains have probably held them in check.

Georgia. P. M. Gilmer and P. A. Glick (July 10): In Tift County quite heavy infestations are developing in all cotton, dusted or not. (July 24): The rather heavy infestation has almost disappeared.

Florida. C. S. Rude and L. C. Fife (July 2): In Alachua and adjacent counties aphids are present in some fields although not numerous enough to cause damage. (July 30): Aphids are less numerous than a week ago. Even in fields that have been dusted they are not numerous.

Mississippi. E. W. Dunnam and J. C. Clark (July 2): Few in most fields in Washington County. (July 30): The aphid population is building up on cotton that has been dusted four or five times.

Louisiana. R. C. Gaines, et al. (July 30): Aphids are beginning to appear in Madison Parish where cotton has been poisoned several times.

Oklahoma. E. E. Ivy (July 25): Fairly common at Idabel, McCurtain County, but not doing much damage except to caged cotton.

Texas. R. W. Moreland and A. B. Beavers (July 30): Aphid infestation heavy in places.

K. P. Ewing (July 16): Where several applications of arsenicals have been made in Calhoun County, aphids are appearing in fairly large numbers. One field was observed where every leaf, square, bloom, boll, and even the stems of the plants were practically covered with aphids and with "honeydew."

Arizona. W. A. Stevenson (July 2): Spotted infestations of aphids were still noted in several fields of cotton in the vicinity of Tucson. Predators were also noted in large numbers. (July 16): The aphid situation is still causing the cotton growers considerable concern.

COMMON RED SPIDER (Tetranychus telarius L.)

South Carolina. J. G. Watts (July 15): A number of outbreaks in Barnwell County on cotton during early July, which was very dry. Subsequent rains have materially reduced the population.

F. F. Bondy and C. F. Rainwater (July 30): Some fields have shown some damage. Infestations very local.

Georgia. P. M. Gilmer and P. A. Glick (July 10): In Tift County isolated patches of cotton infested but no serious damage has been noted. (July 24): Rains have largely cleaned up red spider infestations.

Mississippi. E. W. Dunnam and J. C. Clark (July 9): Few infestations noted in Bolivar County. (July 16): One infestation in Washington County.

Arkansas. D. Isely (July 20): Serious injury occurring in some of the Delta counties, northeastern Arkansas.

FOREST AND SHADE-TREE INSECTS

SATIN MOTH (Stilpnotia salicis L.)

New Hampshire and Vermont. J. V. Shaffner, Jr. (July 18): A few large Carolina poplar trees at White River Junction, eastern Vermont, infested. When examined on July 14, many larvae had died from wilt disease, but a sufficient number had completed development to produce a heavy deposit of eggs. A row of poplars across the river in West Lebanon, N. H., is also heavily infested.

Connecticut. S. S. Crossman (July 11): Large numbers of adults reported as gathered around electric lights in Torrington, Litchfield County, during the week ending on June 25. First record of flight this year.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

New Hampshire. J. G. Conklin (July 26): While abundant in a few localities in the State, it is much less numerous than in 1937.

Vermont. J. V. Schaffner, Jr. (July): Many thousands of acres of sugar maple orchards and forests in Vermont are heavily infested, but the defoliation did not reach the complete stripping point except in a few small areas. Most of the larger infestations probably average 75 percent defoliated. Observations indicate that, in general, the infestations in Addison, Rutland, and Bennington Counties, western Vermont, are on the decline, but defoliation is more apparent in some sections of Windsor and Orange Counties, east-central Vermont, than in 1937. Many sugar orchards show the effects of the severe defoliations of the past 1 to 4 years, and in some localities many dead and dying trees have been cut.

Massachusetts. A. I. Bourne (July 23): Adults flying in large numbers during the first 10 days of July, particularly in the northern part of the Connecticut Valley. Swarms of moths caused considerable annoyance along the Mohawk Trail, particularly in Shelburne and Shelburne Falls.

New York. J. V. Schaffner, Jr. (July): Infestations are severe, particularly in Sullivan, Delaware, and Broome Counties, southern New York.

Ohio. E. W. Mendenhall (July 19): Found on elms at Columbus.

WESTERN TENT CATERPILLAR (Malacosoma pluvialis Dyar)

Washington. W. W. Baker (July 7): Larvae were causing serious damage in a loganberry field, an unusual occurrence. This species occurs on Vashon Island, in Tacoma and the Puget Sound areas, and is present in extremely large numbers each year, though not so abundant this year. Another species of Malacosoma was present in small numbers.

FALL WEBWORMS (Hyphantria spp.)

New York. E. P. Felt (July 22): H. textor Harr. has been somewhat generally abundant in southwestern New England and southeastern New York.

R. E. Horsey (July 15): Nest of H. cunea Drury found on Cotoneaster acutifolia at Rochester, with the caterpillars $\frac{1}{4}$ inch or less in length.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Wisconsin. H. J. MacAloney (July 21): Found prevalent on several species of hardwoods, particularly basswoods and elm in Milwaukee. Heavy defoliation was reported in some places. On July 6 about 20 percent of the larvae had pupated.

GYPSY MOTH (Porthetria dispar L.)

Massachusetts. A. I. Bourne (July 23): Considerable injury reported in the Cape Cod section.

S. S. Crossman (July 11): Defoliation has begun to appear in sections of the western part of the State. Pupation is beginning to take place commonly in the severely infested areas.

Rhode Island. A. E. Stone (July 29): The heaviest infestation that the State has experienced since the early years of infestation is taking place.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Delaware. L. A. Stearns (July 14): Numerous on sycamores along highway in the vicinity of Milford, Sussex County, and generally abundant on evergreens in many localities.

Maryland. E. N. Cory (July 1): General infestation throughout the State.

Virginia. H. G. Walker (July 26): Several plantings of arborvitae at Norfolk have been reported as being moderately infested.

Georgia. T. L. Bissell (July 28): Numerous reports have been received of injury to arborvitae.

Tennessee. G. M. Bentley (July 23): Found July 1 and 7 on arborvitae, junipers, and cedars in Davidson County, and a heavy infestation reported in a nursery in Cheatham County. Both counties are in western Tennessee.

Mississippi. C. Lyle (July 25): Specimens and complaints have been received from practically all sections of the State.

Ohio. T. H. Parks (July 25): More abundant than usual and is the subject of several calls daily.

Kentucky. M. L. Didlake (July 25): Reported on elm at Lexington on July 5; on evergreens at Louisville on July 6; in western Kentucky at Smithland on July 7; and at Williamsburg, in southeastern Kentucky, on July 15.

Illinois. W. P. Flint (July 23): Several reports have been received from the southern half of the State. No specimens or reports of injury received from central or north-central Illinois since the winter of 1935-36.

Texas. R. K. Fletcher (July 22): Some injury to arborvitae and cedar has been recorded in eastern Texas from Cherokee, Jefferson, Kaufman, Dallas, and Brazos Counties.

SCURFY SCALE (Chionaspis furfura Fitch)

Tennessee. G. M. Bentley (July 23): A few elm and maple trees in a nursery in Nashville, Davidson County, were found infested on July 1.

A MIDGE (Contarinia virginianae Felt)

Nebraska. M. H. Swenk (July 23): Reported from east-central Nebraska, Durt County, on July 27 as attacking chokecherry fruits.

LIME-TREE LOOPER (Erannis tiliaria Harr.)

Michigan. R. Hutson (July 25): The lime tree spanworm was common on pin cherry on July 14 about Cadillac, in the northern part of the Lower Peninsula.

ALDER

A SAWFLY (Hemichroa washingtonia Rohw. & Midd.)

Washington. W. W. Baker (July 7): This insect caused complete defoliation of alder on Vashon Island and is about as abundant as usual.

ASH

BANDED ASH BORER (Neoclytus caprea Say)

Nebraska. M. H. Swenk (July 23): Ash trees were reported attacked in southeastern Nebraska, Fillmore County, on July 18.

A PSYLLID (Psyllopsis fraxinicola Foerst.)

Connecticut. E. P. Felt (July 22): Was sufficiently abundant to cause appreciable foliage disfiguration at Greenwich, Fairfield County.

AN APHID (Prociphilus fraxinifolii Riley)

Utah. G. F. Knowlton (July 12): Ash trees at Brigham, in the northwestern part of the State, have the apical growth seriously curled. A large number of the aphids are parasitized.

BIRCH

BRONZED BIRCH BORER (Agrilus anxius Gory)

New York. E. P. Felt (July 22): Reported as seriously injurious in the outskirts of New York City.

Ohio. E. W. Mendenhall (July 18): This pest, attacking white birch, has found its way into Columbus. Dayton, Springfield, and Cleveland have been suffering from its presence for several years.

Iowa. C. J. Drake (July 20): Specimens attacking birch received from Des Moines, Polk County, and Colfax, Jasper County.

CAMPHOR

AVOCADO RED MITE (Paratetranychus yothersi McG.)

Florida. J. R. Watson (July 22): Causing browning of camphor trees in the central part of Florida. This is considerably earlier than usual. It also occurs on avocados but camphor is preferred.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

New Hampshire. J. G. Conklin (July 26): Very abundant throughout the State this year, particularly in cities and towns where no control measures have been applied.

Massachusetts. A. I. Bourne (July 23): Usual amount of damage.

Rhode Island. A. E. Stene (July 29): Showing up more heavily in several sections of the State than in any recent year.

Connecticut. W. E. Britton (July 22): Infestations rather severe in the southern part of Litchfield County and the western part of Fairfield County.

New York. E. P. Felt (July 22): Has been prevalent here and there in southeastern New York in the Hudson River Valley north to Albany.

R. E. Horsey (July 20): Larvae seen feeding on June 24 at Rochester. Since then they have become very numerous on American, European, and Scotch elms. Large-sized larvae are still feeding in small numbers.

Pennsylvania. H. E. Hodgkiss (July 26): On June 21 local infestations in eastern counties were more severe than in 1937. Some larvae were almost mature, and others were in various stages of development.

E. J. Udine (July 11): Larvae are now migrating to the bases of the trees and pupating. All the Chinese elms around Carlisle are affected, the leaves being skeletonized.

Maryland. E. N. Cory (July 5): Reported on elm from Mechanicsville, Saint Marys County.

Virginia. A. M. Woodside (July 20): Fairly common in and around Staunton.

Ohio. E. W. Mendenhall (July 1): Quite bad in Columbus and has spread to every section of the city.

Utah. G. F. Knowlton and F. C. Harmston (July 30): Siberian elms at Smithfield and Hyrum are being seriously damaged by the elm leaf beetle. This is an unusual record for this State.

MOURNING-CLOAK BUTTERFLY (Hamadryas antiopa L.)

South Dakota (July): The caterpillars are unusually abundant in eastern South Dakota, and are doing much damage to elm and willow.

Nebraska. M. H. Swenk (July 23): In scattered localities throughout the State elm trees were being attacked late in June and early in July.

Utah. G. F. Knowlton (July 5): Larvae are damaging elm and willow foliage severely at Milford, in the southwestern part of the State.

ELM SAWFLY (Cimbex americana Leach)

Kansas. H. R. Bryson (July 26): Reported causing injury on native elm at Olathe, northeastern Kansas.

WOOLLY ELM APHID (Eriosoma americanum Riley)

Tennessee. G. M. Bentley (July 23): At Knoxville, Knox County, the leaves and tips of several American elms were highly infested on June 30.

Missour. L. Haseman (July 23): Between July 15 and 20 in the vicinity of Columbia new growth on elm showed rather severe fresh infestation.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

New York. E. P. Felt (July 22): Reported from Yonkers at Westchester County, and Rhinebeck in Dutchess County.

Maryland. R. F. Burdette (July 11): Reported from Ashton, Montgomery County.

Michigan. R. Hutson (July 25): Reported from Midland, Midland County, in the center of the Lower Peninsula, on July 3.

Nebraska. M. H. Swenk (July 23): Report received from Keith County, southwestern Nebraska, of this scale attacking elm trees.

FIR

SPRUCE BUDWORM (Cacoecia funiferana Clem.)

Minnesota. R. H. Nagel (July 21): This insect is common on the Minnesota-Ontario border. About 10 square miles of jack pine on the Cut Foot Sioux Ranger District, Chippewa National Forest, is heavily infested.

Wyoming. D. DeLeon (July 25): Extensive defoliation of Douglas fir is taking place at Sheep Mountain in the Centennial district.

Colorado. J. A. Beal and D. DeLeon (July 25): Infestation on Douglas and white firs in the following localities: West Creek; Pike National Forest, Platte River's South Fork; La Veta Pass, San Isabel National Forest; and Ouray. Extensive defoliation occurring.

LOCUST

SILVER-SPOTTED SKIPPER (Epargyreus tityrus F.)

Kentucky. M. L. Didlake (July 25): Reported injuring young locust trees at Guston, Meade County, on July 6.

LOCUST BORER (Cyllene robiniae Forst.)

Tennessee. G. M. Bentley (July 23): Several locust trees on June 11 were highly infested with the young of this insect at Johnson City, Washington County.

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Kentucky. M. L. Didlake (July 25): Very abundant at Covington, Kenton County, on July 20.

MAPLE

GREEN-STRIPED MAPLE WORM (Anisota rubicunda F.)

Kansas. H. R. Bryson. (July 23): Reported as defoliating maple trees near Valley Falls and Oskaloosa, northeastern Kansas.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Connecticut and New York. E. P. Felt (July 22): Found curling the foliage of cutleaf maples near Hartford and at Accord, Ulster County, eastern New York.

TERRAPIN SCALE (Lecanium nigrofasciatum Perg.)

Michigan. E. I. McDaniel (July 22): Hatching and quantities of it infesting soft maple at Fenton, Genesee County, in southeastern Michigan.

A SCALE INSECT (Aspidiotus comstocki Johns.)

South Carolina. J. A. Berly (June 30): On leaves of Norway maple at Greenville
on June 22. (Det. by H. Morrison.)

MAPLE BLADDER GALL (Phyllocoptes quadripes Shim.)

Maryland. E. N. Cory (July 1): Reported as generally infesting maples in the
State.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Pennsylvania. H. E. Hodgkiss (July 26): Specimens sent from near Pittsburgh.
Reported on July 21 as being abundant on soft maples.

Indiana. J. J. Davis (July 26): Has been the subject of numerous reports from
northern Indiana and a few from the southern part.

OAK

TWIG PRUNER (Hyperallus villosus F.)

Michigan. R. Hutson (July 25): Reported from Milford, Oakland County, in south-
eastern Michigan, on July 16.

TWIG GIRDLER (Oncideres cingulatus Say)

Iowa. C. J. Drake (July 20): Specimens have been received from Des Moines and
Cedar Rapids.

A LEAF ROLLER (Argyrotoxa semipurpurana Kearf.)

New Jersey. C. W. Collins (June 22): Larvae were responsible for partial de-
foliation of pin oaks in southern Morris, northern Somerset, and western
Union Counties, all in north-central New Jersey, where the infestation was
rather general during May. Frequent instances of almost complete de-
foliation were noted. (Det. by A. Busck.)

A LEAF MINER (Lithocolletes hamadryella Clem.)

New York. E. P. Felt (July 22): Reported as extremely abundant on western Long
Island.

OBSCURE SCALE (Chrysomphalus obscurus Comst.)

Mississippi. C. Lyle (July 25): Report of several oaks in Lauderdale County, in
the eastern part of the State, having been injured.

A GALL INSECT (Neuroterus umbilicatus Bass.)

New York. R. E. Horsey (July): Found in considerable numbers on the under sides
of swamp white oak leaves, especially near the tips of the branches, on
July 14 at Rochester.

PINE

A CHRYSOMELID (Colaspis pini Barber)

Mississippi and Louisiana. T. E. Snyder (July 24): Pine needles being browned and trees believed to be dying from the effects of feeding at Covington and Slidell, St. Tammany Parish, La., and at Gulfport, Miss.

SAWFLIES (Neodiprion spp.)

Vermont. J. V. Schaffner, Jr. (July 18): Larvae of Neodiprion sp. sent to the laboratory with a report that they were taken on red pines in Rutland County. The infested plantation is about 20 years old and about 1 acre has been severely defoliated. This is the species which has been prevalent in eastern Massachusetts the last 3 years.

Connecticut. E. P. Felt (July 22): N. pinetum Nort. is quite prevalent on a small planting of pine at Danbury.

Ohio. T. H. Parks (July 25): Larvae of N. abbotti Leach were received on July 20 from Knox County, in north-central Ohio, with the statement that they had caused serious injury to white pine.

Michigan. R. Hutson (July 25): N. pinetum was reported on white pine at Grosse Pointe, Wayne County, and at Grand Rapids, Kent County.

A SAWFLY (Neodiprion sertifer Geoffr.)

Michigan. E. I. McDaniel (July 12): Received on Norway pine from Grayling, northern Lower Peninsula. The sawflies were attacking the mature growth of the pines. (Det. R. A. Cushman.)

LODGEPOLE NEEDLE MINER (Recurvaria milleri Busck)

California. J. E. Patterson (July 13): Specimens have been taken from pinon pine in the Inyo National Forest. (Det. A. Busck.)

A MOTH (Pinipestes zimmermanni Grote)

Wisconsin. H. A. MacAloney (July 21): In a 12-year-old mixed stand of Scotch and jack pine at White Fish Bay, Milwaukee County, the former is heavily infested, whereas the latter species is only slightly infested. When the trees were examined on July 7 the larvae were nearly full grown.

A SCALE INSECT (Matsucoccus matsumurae Kuw.)

Massachusetts. A. I. Bourne (July 23): An infested twig of pitch pine, Pinus rigida, was received from Lexington. The extent of the infestation was not reported.

POPLAR

POPLAR TENTMAKER (Ichthyura inclusa Hbn.)

Ohio. T. H. Parks (July 25): This pest has injured poplars in Morgan County, southeastern Ohio. Specimens received on July 9.

E. W. Mendenhall. (July 14): Is doing some damage to poplars in nurseries in Licking County, north-central Ohio.

A LEAF BEETLE (Chrysomela tremulae F.)

Minnesota. H. J. MacAloney (July 21): This beetle is fairly common on aspen all over the Superior National Forest. Eggs and young larvae were also found on July 18.

COTTONWOOD LEAF BEETLE (Chrysomela scripta F.)

Nebraska. M. H. Swenk (July 23): Sent in on June 27 from Butler County, in eastern Nebraska, with the report that this species, together with the goldsmith-beetle (Cotalpa lanigera L.), was defoliating cottonwood trees.

NEVADA BUCK MOTH (Hemileuca nevadensis Stretch)

Nebraska. D. B. Whelan (July 26): Caterpillars were feeding on cottonwood leaves in Logan and Custer Counties, in central Nebraska, early in July.

SPRUCE

EUROPEAN SPRUCE SAWFLY (Diprion polytomum Htg.) . . .

New Hampshire and Vermont. J. V. Schaffner, Jr. (July 18): Areas around Lincoln, western Vermont, and Wilmington, eastern Vermont, and Dublin and Temple, in southwestern New Hampshire, which were found heavily infested in 1937, are again heavily infested. Cocoons of the first generation were found commonly on July 8.

A SAWFLY (Pikonema alaskensis Rohw.)

Minnesota. H. J. MacAloney (July 21): Throughout northern Minnesota the yellow-headed spruce sawfly is common. Individual small trees here and there have nearly all of the 1938 needles eaten, but over the region as a whole the damage is slight.

AN APHID (Chermes lariciatus Patch)

Michigan. R. Hutson (July 25): Found on white spruce at Manistique, Schoolcraft County, Upper Peninsula, on June 30.

SPRUCE MITE (Paratetranychus uniunguis Jacobi)

Massachusetts. A. I. Bourne (July 23): Mite injury on spruce has been quite common in the State.

Connecticut. M. P. Zappe (July 23): Mites are more abundant on evergreens in nurseries than for several years.

Michigan. R. Hutson (July 25): Reported from Farmington, Saint Johns, East Lansing, Kalamazoo, Dattle Creek, Detroit, and Jackson.

SUMAC

A CATERPILLAR (Datana perspicua G. & R.)

Nebraska. M. H. Swenk (July 23): Report of this insect defoliating ornamental sumac on July 9.

SYCAMORE

A RED SPIDER (Tetranychus sp.)

Florida. J. R. Watson (July 22): Sycamore loaves received from Polk County, in central Florida, heavily infested, with the statement that all the sycamore trees in that section were very much browned. Species not determined.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Tennessee. G. M. Bentley (July 23): On June 31 a few walnut trees near Lebanon, in Wilson County, were infested.

Ohio. T. H. Parks (July 25): The walnut datana is now feeding on walnut and hickory throughout central Ohio.

Michigan. R. Hutson (July 25): Reported at Marcellus, southwestern Michigan, on July 3.

Illinois. W. P. Flint (July 23): The first brood of caterpillars is very abundant. The moths have been taken in larger numbers than for 5 years during which records have been kept.

Missouri. L. Haseman (July 23): During the first 2 weeks of July colonies of the caterpillar were very abundant throughout the State, and; where no efforts to control were made, they stripped a great many of the walnut and some hickory trees. By July 20 practically all of the caterpillars were mature. In breeding cages many had pupated by July 15. Maturing this early, there is likely to be another generation.

Nebraska. M. H. Swenk (July 23): Report of walnut trees being attacked received from Douglas County, on the eastern border, on July 19.

Kansas. H. R. Bryson (July 26): Reported defoliating walnut trees at Shawnee, northeastern Kansas. Observed at Manhattan but not destructive.

WILLOW

BEETLES (Coleoptera)

Massachusetts. A. I. Bourne (July 23): Willows continue to show the effects of the willow flea weevil (Orchestes rufipes Lec.) and the willow leaf beetle. Wet weather has done much to keep the trees in good condition so that they do not show quite the amount of damage they otherwise might.

INSECTS AFFECTING GREENHOUSE
AND ORNAMENTAL PLANTS

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana Walk.)

Ohio. E. W. Mendenhall (July 19): Found in abundance on spirea stock in a nursery at Columbus.

A SPHINX MOTH (Sphecodina abbottii Swains.)

Vermont. H. L. Bailey (July 27): More plentiful than usual in Washington County, central Vermont, though not in outbreak numbers. Specimens of nearly full-grown larvae received from various points, largely on woodbine, from July 18 to 25.

A WEEWORM (Crambus sp.)

Pennsylvania. H. E. Hodgkiss (July 26): Adults were plentiful on golf greens in the Philadelphia area on July 7.

FLEA BEETLES (Halticinae)

Florida. J. R. Watson (July 28): Blepharida rhois Fors. defoliated some Brazilian pepper trees at Sarasota, on the southern Gulf coast. Altica ignita Ill. was sent in from Pinellas County, on the Gulf, where it was reported as severely damaging crapemyrtle and azaleas.

HAIRY CHINCH BUG (Blissus hirtus Montd.)

Connecticut. E. P. Felt (July 22): Causing some injury to lawns in southwestern Connecticut in spite of numerous rains. The damage is considerably less than last year.

Rhode Island. A. E. Stone (July 29): Hairy chinch bug reported from two or three places in the State.

New York. E. P. Felt (July 22): Reported from Bedford and Port Chester, in Westchester County.

Pennsylvania. H. E. Hodgkiss (July 26): The infestation is heavy on uncut golf greens in the Philadelphia area. Few adults were present, but all stages of nymphs were found on June 21.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

Virginia. H. G. Walker (July 26): Very abundant and reported as seriously injuring a wide variety of trees and shrubs in and near Norfolk.

South Carolina. J. A. Berly (July 26): Heavy infestation on mulberry at Fair Forest, Spartanburg County.

Texas. R. K. Fletcher (July 22): Very seriously injured Amur privet in Harris County. Also recorded on privet and French mulberry in Galveston County. Both counties are in southeastern Texas.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Georgia. T. L. Bissell (July 15): Collected on Pittosporum tobira in Amsterdam and reported from Americus, southwestern Georgia.

Louisiana. D. A. Osterberger (July): Found on nandina, boxwood, and pittosporum around Baton Rouge.

BARBERRY

A CATERPILLAR (Omphalocera dentosa Grote)

Nebraska. M. H. Swenk (July 23): Specimens taken from a barberry bush in Stanton County, eastern Nebraska, on June 25.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Ohio. E. W. Mendenhall (July 21): Quite bad on chrysanthemum in greenhouses at Barnesville, southeastern Ohio.

THRIPS (Thysanoptera)

Maryland. E. N. Cory (July 11): Attacking chrysanthemum at Rockville, Montgomery County.

Ohio. E. W. Mendenhall (July 21): The greenhouse thrips (Heliothrips haemorrhoidalis Bouche) is quite severe on chrysanthemum in greenhouses in Barnesville.

COLUMBINE

COLUMBINE BORER (Papaipema purpurifascia G. & R.)

Massachusetts. A. I. Bourne (July 23): Several complaints of the activities of this borer from various sections of the State.

A WEEVIL (Conotrachelus anaglypticus Say)

Maryland. C. A. Weigel & F. F. Smith (July): Found at Beltsville infesting roots and crowns of columbine, causing a wilting, yellowing, and ultimate death of plants by severing the growth at the crowns and near the leaf base.

DOGWOOD

ROUNDHEADED APPLE TREE BORER (Saperda candida F.)

North Carolina. D. L. Wray (July 12): Doing extensive damage to dogwood trees in nurseries and in the woods in the vicinity of Asheville. It is quite serious to budded pink dogwood. The larvae have killed limbs from 1 to 2 feet in length. A slight discoloration of the foliage is the first sign of the damaged twigs. In some places an armful of twigs containing larvae could be collected.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Maryland. E. N. Cory (July 5): Reported as general in the State.

Virginia. H. G. Walker (July 26): Present in the Norfolk district in about its usual abundance.

Tennessee. G. M. Bentley (July 23): Badly infesting Euonymus japonica at Memphis, Shelby County, and Nashville, Davidson County, as reported on June 21.

Texas. R. K. Fletcher (July 22): Heavily infested leaves and stem of a shrub from Harrison County, northeastern Texas.

GLADIOLUS

THRIPS (Thysanoptera)

Indiana. J. J. Davis (July 26): Gladiolus thrips (Taeniothrips simplex Morison) exceptionally abundant and destructive throughout the State.

Kentucky. M. L. Didlake (July 25): Reported at Lexington on July 11.

Washington. H. P. Lanchester (July 15): Onion thrips (Thrips tabaci Lind.), probably from adjacent onion fields being harvested, swept over gladiolus plantings at Walla Walla and ruined flower spikes. They left in a few days. Gladiolus thrips were present, but in very limited numbers.

HONEYSUCKLE

A SAWFLY (Abia inflata Nort.)

Illinois. C. L. Metcalf (June 11): Reported as having ruined a lot of honeysuckle shrubbery in northwestern Illinois.

JUNIPER AND CEDAR

JUNIPER SCALE (Diaspis carueli Targ-Tozz.)

New Jersey. C. H. Hadley (July 28): Many complaints from residents of Moorestown and vicinity, Burlington County, of injury to ornamental junipers.

Oregon. D. C. Mote (July): Normal infestation in the Willamette Valley, western Oregon. Crawling young settled down by July 1.

JUNIPER WEDWORM (Dichomeris marginellus F.)

Ohio. E. W. Mendenhall (July 15): Caterpillars were found infesting junipers slightly at Pataskala, south-central Ohio.

MAGNOLIA

MAGNOLIA SCALE (Neolecanium cornuparvum Thro)

New York. R. E. Horsey (July): Exceptionally numerous on Magnolia acuminata on July 8 at Rochester. Autos parked under one tree became sticky with exudations like fine rain.

PALM

PALM LEAF SKELETONIZER (Homoledra sabalella Chamb.)

Alabama. R. W. Dawson (June 6): This insect received from Mobile. (Det. by C. Heinrich.)

ROSE

ROSE CURCULIO (Rhynchites bicolor F.)

Nebraska. D. B. Whelan (July 26): Present on wild roses in eastern Nebraska during early July, and also reported as doing considerable damage in an ornamental rose garden in Lincoln, Lancaster County, on July 12.

ROSE SAWFLY (Caliroa aethiops F.)

Nebraska. M. H. Swenk (July 23): This rose slug was reported in Harlan County, south-central part of the State, on June 26.

ROSE SCALE (Aulacaspis rosae Bouche)

Ohio. E. W. Mendenhall (July 22): The scale is found quite bad in places where roses are grown in central Ohio.

WATERLILY

A FULGORID (Megamelus davisii Van D.)

North Carolina. C. S. Brimley (July 18): These fulgorids have persisted since 1934 and thoroughly spoil the blooming of waterlilies at Raleigh. Possibly some of this may be due to the presence of a species of thrips, first detected this year on the under side of the leaves in hundreds. The fulgorids occur all season and are difficult to control.

YEW

BLACK VINE WEEVIL (Brachyrhinus sulcatus F.)

Massachusetts. E. P. Felt (July 22): Reported as injuring yew in the Boston area.

A MEALYBUG (Pseudococcus cuspidata Rau.)

Ohio. J. S. Houser (June 27): Mealybugs sent from Canton, east-central Ohio. They are infesting Japanese yew. (Det. by H. Morrison.)

CORRECTION

Note: Please change the generic name Eucosma to Suliema, on Page 306, line 5 under Sunflower, Insect Pest Survey Bulletin, Vol. 18, No. 5, July 1, 1938.

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MOSQUITOES (Culicinae)

Delaware. L. A. Stearns (July): Peak flight of Aedes sollicitans Walk. at Lewes, Sussex County, from July 10-13.

Georgia. A. L. Brody (July): Culex pipiens L., quite annoying in houses at Valdosta, south-central Georgia, since the middle of June.

Florida. S. E. Shields. (July 13): Mosquitoes, particularly A. sollicitans and A. taeniorhynchus Wied., quite bad at Fort Pierce now. Reported more abundant in other places, especially from Vero Beach and Palm Beach.

W. V. King. (July 22): More or less severe outbreaks of mosquitoes during July and late June in nearly all areas along the Atlantic coast, as well as in some sections of the Gulf coast. The species principally involved has been the salt-marsh mosquito, A. taeniorhynchus, although large numbers of the freshwater breeder, Psorophora columbiae D. & K., have also appeared in some sections.

Mississippi. E. E. Rogers (July 19): Considerable numbers of Anopheles quadrimaculatus Say and C. pipiens reported at Sylvaena, just south of central Mississippi.

Indiana. J. J. Davis (July 26): Mosquitoes exceptionally abundant throughout the State.

Missouri. L. Haseman (July 23): Two or three species of common mosquitoes very abundant and annoying throughout central Missouri.

EYE GNATS (Hippelates sp.)

Georgia. A. L. Brody (July 19): Extraordinarily abundant during the past month at Valdosta, an average of about five per person being noticed indoors in screened houses. Average considerably higher outdoors, especially in the woods.

MIDGES (Chironomus spp.)

New York. G. H. Bradley (July 13-15): A large outbreak of gnats which are breeding in enormous numbers in semiartificial lakes and lagoons on the site of the New York World Fair. So abundant and troublesome as to cause a serious menace to the success of the Fair unless controlled.

FEATHER MITE (Liponyssus sylvianus C. & F.)

New York. Mrs. C. R. Marshal (May 26): Mites collected on window sill at Ardsley, Westchester County. Mites very abundant. (Det. by H. E. Ewing.)

A SPRINGTAIL (Sira sp.)

Illinois. C. L. Metcalf (June 11): Specimens, probably S. platani Nicolet, submitted from northeastern Illinois with the statement that they were swarming over window sills and into a room where old papers and magazines were stored. (Det. by A. B. Gurney.)

CHIGGER (Trombicula irritans Riley)

Delaware. L. A. Stearns (July 18): Complaints received from Fenwick Island.

Ohio. N. F. Howard (July 2-24): Continuing abundant and annoying despite frequent showers and rather high relative humidity.

Missouri. L. Haseman (July 23): Seemingly very abundant and active, judging by complaints from all over the State.

Iowa. C. J. Drake (July 20): Reported as very abundant in a number of southern Iowa counties and in the eastern part of the State, along the Mississippi River. Very heavy infestations reported at Dubuque and Burlington.

South Dakota. H. C. Severin (July): Abundant along the Missouri River bottoms, in the southeastern part of South Dakota.

Nebraska. M. H. Swenk (July 23): Many complaints of annoyance by chiggers infesting lawns received from Douglas and Lancaster Counties, in eastern Nebraska, during the period from June 21 to July 20.

CATTLE

SCREWORM (Cochliomyia americana C. & P.)

Georgia. A. L. Brody (July 19): Infestations increased considerably in the vicinity of Valdosta during the last month. Twenty-nine egg masses and 3 infestations observed from June 22 to July 19 on artificially wounded animals. An infestation in a steer, predisposed by the Gulf coast tick, also observed. At the Valdosta laboratory infested animals received four egg masses during the week ending on July 9. A case in a heifer was reported on July 1, as well as another in a cow on July 6. Three screwworm cases reported in Savannah on July 8. Other complaints numerous.

STABLEFLY (Stomoxys calcitrans L.)

Missouri. L. Haseman (July 23): Abundant and unusually annoying to man as well as livestock just ahead of recent rains.

Nebraska. M. H. Swenk (July 23): Inquiries as to the control received during the period from June 21 to July 20 from Washington, Pawnee, Saline, Boone, and Kearney Counties, in the eastern half of the State.

HORN FLY (Haematobia irritans L.)

Missouri. L. Haseman (July 23): Continuing in about normal abundance.

North Dakota. J. A. Munro (July 22): Very abundant and generally distributed over a large part of the State.

LONE STAR TICK (Amblyomma americanum L.)

New Jersey. G. H. Bradley and W. A. Connell (July 24): Collected from man near May's Landing, Atlantic County, southeastern New Jersey. Apparently the first record of the occurrence of this tick in New Jersey, and probably the farthest north it has been taken.

GREENBOTTLE FLY (Lucilia sp.)

Georgia. A. L. Brady (July 19): Seven wound infestations reported during the last month in the vicinity of Valdosta.

HORSE

HORSEFLIES (Tabanidae)

Texas. W. G. Bruce (July 10): Specimens of tabanids taken in four cattle fly traps in the Dallas district during the last 2 weeks as follows: Tabanus lineola var. scutellaris Walk., 97; T. lineola F., 23; T. sulcifrons Macq., 11; T. benedictus Whit., 10; Silvius quadrivittatus Say, 8; Chrysops callidus O. S., 1; and C. flavidus Wied., 2.

DOTFLIES (Gastrophilus spp.)

Washington. C. F. Bishopp and M. P. Jones. Three horses on a farm near Pullman, eastern Washington, found to be infested with about 10, 40, and 150 eggs, respectively, of the throat bot, G. nasalis L. One group of about six of these eggs was on the fore leg. Some reactions noted among horses on one farm, indicating throat bot attack.

California. F. C. Bishopp and A. W. Lindquist (July 17): Two horses in the vicinity of Upper Lake, northern California, showed five or six eggs of the throat bot, G. nasalis, on one. There were no G. intestinalis Dog. eggs.

BLACKFLIES (Simulium spp.)

Nebraska. M. H. Swenk (July 23): Inquiries as to control of Simulium flies received from Adams, eastern Nebraska, and Box Butte, western Nebraska, Counties. The former on July 9 referred to S. vittatum Zett., attacking horses, while the latter on July 11 was of Simulium sp. flies bothering a dog.

MISCELLANEOUS ANIMALS

A TICK (Dermacentor sp.)

Delaware. L. A. Stearns (July 14): Heavy infestation on dogs at Glasgow, in Newcastle County.

BITING CAT LOUSE (Bovicola subrostratus Nitz.)

Nebraska. M. H. Swenk (July 23): Infestation on a cat reported from Antelope County, northeastern Nebraska, on July 1.

HOUSEHOLD AND STORED-PRODUCTS INSECTS

TERMITES (Reticulitermes spp.)

Rhode Island. A. E. Stene (July 29): Found in large numbers in a South Kingstown house.

Pennsylvania. H. E. Hodgkiss (July 26): Causing serious damage to buildings in different parts of the State.

Iowa. C. J. Drake (July 20): Doing damage to houses in Iowa City, Johnson County, eastern Iowa.

Nebraska. M. H. Swenk (July 23): Inquiries concerning termites (R. tibialis Banks) received from June 21 to July 20 from Lancaster and Furnas Counties, several from the latter county relative to this pest attacking living trees.

Oklahoma. F. A. Fenton (July 22): Termites (R. flavipes Koll.) reported from several localities, scattered throughout the State.

Texas. R. K. Fletcher (July 22): Severely injured Japanese euonymus, wax leaf ligustrum, and photinia in a nursery at Fort Worth, Tarrant County.

ANTS (Formicidae)

Massachusetts. A. I. Bourne (July 23): Ants have been the subject of an unusually large number of complaints, both indoors and in lawns.

Connecticut. N. Turner (July 20): The usual number of infestations of Camponotus herculeanus pennsylvanicus Deg. on porches.

New York. R. E. Horsey (July): The black carpenter ant (C. herculeanus pennsylvanicus) found in an old frame house in Rochester.

Maryland. E. N. Cory (July 9): The pavement ant, Tetramorium caespitum L., reported as being generally present in the State.

Mississippi. C. Lyle (July 25): On July 16 specimens received of the Argentine ant, Iridomyrmex humilis Mayr, for the first time from Pheba, in Clay County. Judging from letters from correspondents in infested towns over the State, these ants are very abundant in places where no campaigns were conducted last year. On June 28 specimens received of Iridomyrmex pruinosus var. analis Andre from Greenville, Washington County, in the Delta. Specimens of Solenopsis xyloni McCook recently sent from Tupelo, in the northern part of the State.

Nebraska. M. H. Swenk (July 23): Many inquiries on the control of ants received from Lancaster and Adams Counties during the period from June 21 to July 20. Infestations reported from Johnson and Douglas Counties on June 28 and July 5, respectively, of the big black carpenter ant (C. herculeanus pennsylvanicus) in a pantry and in cellar steps. Specimens of Crematogaster lineolata Say were received from Nemaha County on July 12, with the report that they had been found in a porch of a house where water had caused the wood to rot.

Kansas. H. H. Walkden (July 7): The thief ant (Solenopsis molesta Say) was found injuring kafir seed in one field near Manhattan, northeastern Kansas. Damage necessitated replanting a portion of the field.

Oklahoma. C. F. Stiles (July 22): The harvester ant (Pogonomyrmex barbatus F. Smith) apparently increasing throughout the western half of the State, and they are so numerous at Frederick that an eradication campaign is now under way.

F. A. Fenton (July 22): Monomorium pharaonis L. reported at Carnegie, Caddo County, in western Oklahoma, and the red harvester ant, P. barbatus, reported from the following localities: Frederick, Tillman County, and Geary, Blaine County, in western Oklahoma.

Utah. G. F. Knowlton (July 22): Annoying in many homes and gardens in Cache, Salt Lake, and Utah Counties this spring.

INDIAN-MEAL MOTH (Plodia interpunctella Hbn.)

California. P. Simmons (June 12): Dry fruits of the evergreen fig (Ficus macrophylla) stored in the laboratory, at Fresno, produced 14 Indian-meal moths between the time of collection (November 1937) and June 12, 1938. The fruits were collected at Santa Barbara. Infestation may have occurred in the laboratory. One parasite, Idechthis canescens Grav., emerged in the same container. (Det. by C. Heinrich and R. A. Cushman.)

DRUG STORE BEETLE (Sitodrepa panicea L.)

Ohio. T. H. Parks (July 25): A large grocery store in Marion County, central Ohio, troubled with this beetle in several food products.

RING-LEGGED EARWIG (Euborellia annulipes Lucas)

Mississippi. C. Lyle (July 25): On June 30 specimens of this earwig sent from Big Point, Jackson County, in the southern part of the State, with a report that severe injury to stored Irish potatoes had been observed. Specimens sent on July 22 from Grenada County, in the northern part of the State, with a report that they had damaged stored Irish potatoes to some extent.

EUROPEAN EARWIG (Forficula auricularia L.)

Utah. G. F. Knowlton (July 2): Well established at Farmington in Davis County, being abundant in many favorable places. (Det. by A. B. Gurney.)

A BEETLE (Microbregma emarginatum Duft.)

New Hampshire. E. P. Felt (July 22): Anobiid beetle found abundant in spruce slabs on a camp at Dublin, southwestern New Hampshire, loosening the bark and puncturing the wood.

SAWYERS (Monochamus spp.)

Massachusetts. A. I. Bourne (July 23): M. notatus Drury and M. scutellatus Say emerged from house timbers. In the case of the former species the adult bored out from the timber through the plaster and wall paper. The house was about 1 year old and was made from pine trees on the owner's property at Wilbrahan, in southern Massachusetts.

South Carolina. F. Sherman (July 26): The pine sawyer, M. titillator F., reported from Hampton County, in the southern part of the State.

A BORER (Hylotrupes bajalus L.)

Pennsylvania. H. E. Hodgkiss (July 26): Infestations in houses reported more generally than in other years. Some infestations observed causing severe damage.

BARK LICE (Psocidae)

Massachusetts. A. I. Bourne (July 23): Myriads of psocids reported on July 15, hiding beneath the shingles of a small bungalow near the College at Amherst, in western Massachusetts. These insects were present on the northeastern corner of the building, from the basement to the eaves, a section which is shaded throughout the day by nearby trees.



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INSECT CONDITIONS IN HAWAII

By O. C. McBride

The Mediterranean fruitfly (Ceratitis capitata Wied.) population level showed a gradual decrease from April 1931 through 1934. In 1935 there was a rapid increase in population level, reaching the peak in 1936. During 1937 the population level started to decline and at the present time, July 1, 1938, it is at about the 1932 level. Parasitization records of the Mediterranean fruitfly parasite (Opius humilis Silv.) for the period 1914-1933 shows that this species reaches its maximum abundance during March to May. During March to June 1938 parasite records were made on 260,000 fly pupae, field collected, only 4 specimens being obtained. Since last October only seven specimens have been recovered. These records are for the Island of Oahu.

Growers of Kauai have reported that the rice borer (Chilo simplex Butl.) in certain areas is causing considerable damage to rice and is more abundant than for the past 2 or 3 years.

The taro leafhopper (Megamelus proserpina Kirk.) on the Island of Oahu, at Honolulu and Kaneohe, is less abundant this season and is apparently coming under control.

D. T. Fullaway reports that coconut palm scale (Pinaspis buxi Bouche) is increasing on the windward side of the Island of Oahu. Twenty-five large coconut palms were killed during the month of June. The scale is quite bad on bananas. Several species of ornamental palms are attacked.